

6 RECREATION AND LAND USE

Based on review of existing information, as presented in the Boundary Project Pre-Application Document (PAD; SCL 2006), additional data collection, and consultation with agencies, tribes, and other stakeholders (relicensing participants), SCL has identified the need for a Recreation Resource Study (RRS). This proposed study will analyze current recreational use and opportunities in the Project area and region, as well as potential future recreational demand and need over the term of the new license (30 to 50 years). The overall RRS is comprised of the following five study elements:

- Recreation surveys
- Regional recreation analysis
- Dispersed recreation use, access, and condition analysis
- Future recreation use analysis
- Recreation carrying capacity analysis

In addition, a separate Land and Roads Study (LRS) is proposed, as described below (see section 6.2). The LRS will analyze land ownership and rights in the Project area and adjacent to the Project boundary, road access and rights-of-way needed for Project operations, roadway condition of Project-related roads, and roads used by the public to access the Project shoreline.

Other proposed studies that are related to recreation and land use but described under a different resource area include the Erosion Study (see Geology and Soils, section 2.1), the Recreational Fishery Study (see Fish and Aquatic Resources, section 4.7), and the Aesthetic/Visual Resource Study (see Aesthetics/Visual Resources, section 7.1).

For the RRS, the overall process for addressing recreation resources, as well as defining associated existing and future recreation needs in the Project area during relicensing, is presented in Figure 6.0-1. This diagram illustrates how recreation resources will be inventoried and analyzed extending from the development of the PAD in May 2006 through preparation of the Preliminary License Proposal (PLP) and License Application. The diagram also shows how the five different study elements in the RRS relate to one another. Following completion of the RRS, study results will be analyzed and synthesized. This recreation needs analysis and synthesis will be conducted in conjunction with the comprehensive integrated resource analysis, (see section 1.2.5 of this PSP), which will include a full assessment of potential Project-related impacts, including the effects of Project operations and maintenance and Project-related recreation. Based on the outcome of this integrated resource analysis, SCL will develop a proposed Recreation Management Plan (RMP) for the Project.

The proposed recreation needs analysis and synthesis will not collect additional study information, but will synthesize RRS study element results, and the results of other related resource studies, and will identify existing and future recreation needs related to the Project. Identified Project-related recreation needs, with input from relicensing participants, will be considered by SCL for inclusion in a proposed RMP for the Project, as appropriate, that will be filed with FERC as part of the PLP and License Application. The proposed RMP will help guide SCL's recreation planning and management at the Project for the term of the new FERC license (30 to 50 years).

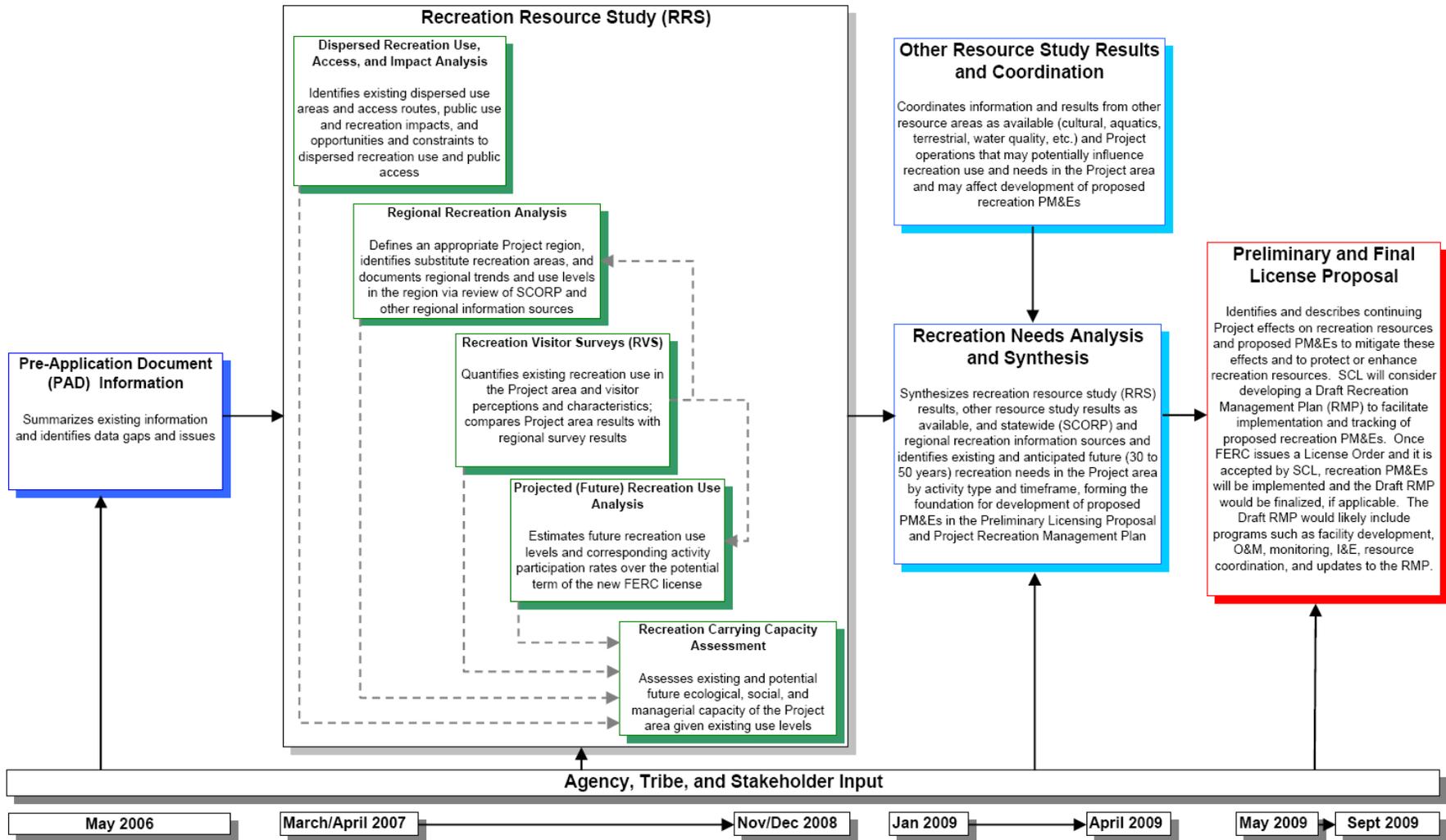


Figure 6.0-1. Process for recreation resources evaluation within the relicensing process for the Boundary Project.

6.1. Recreation Resource Study

The proposed RRS will address a variety of information needs as described below. Currently, there is limited information regarding existing recreation and public use in the Project area. Additional data are needed to adequately describe existing and future visitor use levels and patterns, preferences, impacts, and demand in the Project area. Such data are also needed to determine existing and future recreation needs in the Project area.

Existing information regarding the Project area's role in providing specific regional recreation opportunities and helping meet regional demand is also incomplete. Additional information and consultation with relicensing participants is needed to better understand the regional context of the Project, as well as recreation carrying capacity levels at surrounding recreation sites and use areas that may affect Project-area recreation use.

The amount, extent, and potential impact of Project-related dispersed recreation use on the Project area's land and water resources is currently unknown, although recent observations in 2005 and 2006 have revealed that some level of impact may be occurring. Various user-defined and developed roads and trails exist along the reservoir shoreline, providing public access to the reservoir. However, more information is needed to fully describe how visitors access and use the Project shoreline, where shoreline access is limited or non-existent, and if and where recreational use and shoreline access potentially impacts sensitive resources. Dispersed recreational use of the reservoir shoreline, such as off-highway vehicle (OHV) use or dispersed camping, and public use of user-defined or developed access roads to the shoreline potentially affect sensitive resources (e.g., wildlife, aquatic resources, cultural resources, etc.) along the shoreline.

Information on existing recreation carrying capacity is needed to determine if existing recreational use levels are below, approaching, at, or exceeding the Project area's ability to accommodate recreational use without adversely impacting the biophysical/ecological, social, or managerial capacity of the Project area. Recreation demand for water- and shoreline-related recreation facilities and opportunities, such as those found in the Project, continues to increase in the state and region, according to the Washington State Comprehensive Outdoor Recreation Plan (SCORP) (IAC 2002, 2003) and other national projections (Cordell et al. 1999) and regional studies. As currently developed, some existing public recreation sites and use areas in the Project area may not be capable of accommodating higher levels of recreational use that may occur during the term of the new license, particularly during peak-use summer weekends. Additional recreation activity demand information is needed to determine whether future use levels exceed capacity thresholds at existing recreation facilities.

This study plan was developed with input from the USDA Forest Service (USFS), USDI National Park Service (NPS), Washington State Interagency Committee for Outdoor Recreation (IAC), and other stakeholders. Consultation with relicensing participants and other resource workgroups is discussed in more detail below (refer to "Consultation with Agencies, Tribes, and Other Stakeholders").

6.1.1. Nexus Between Project Operations and Effects on Resources

The Project provides a number of public recreation opportunities including developed recreation sites, recreational use of the reservoir water surface, and dispersed use of undeveloped areas along the reservoir shoreline. To date, no known Project-related impacts related to recreation resources and land use in the Project vicinity have been identified. However, based on review of existing recreation resource and land use information, and PAD-related field reconnaissance conducted in 2005 and 2006, potential Project-related impacts related to recreation resources and land use include the following:

- Potential recreation-related impacts to sensitive resources along the reservoir shoreline
- Boat ramp usability limitations and the potential for boat stranding caused by reservoir pool level fluctuations
- Public use and access limitations to some recreation facilities and public use areas due to Project security requirements
- The possible role of recreational shoreline use as a contributing factor to shoreline erosion at some erosion sites
- Periodic summer weekend crowding at the Forebay Recreation Area due to the site's limited capacity

These potential impacts, as well as others that may be identified during the RRS, should be adequately addressed by the RRS and fully considered prior to the development of license requirements and a proposed RMP for the Project.

6.1.2. Agency Resource Management Goals

In addition to providing information needed to characterize potential Project effects, the proposed RRS will provide information to help agencies, tribes, and other stakeholders with jurisdiction over recreation and land use in the Project area and vicinity identify potential measures for consideration in the proposed RMP for the Project. Additionally, the RRS will identify Project-related recreation opportunities that may help address some regional and/or statewide recreation needs defined in the Washington SCORP (IAC 2002), as amended, as well as USFS, BLM, Pend Oreille County, Towns of Metaline and Metaline Falls, and Washington Department of Transportation (WDOT) recreation resource management goals, as applicable, in the areas within and surrounding the Project.

Relevant recreation resource management goals are summarized below for agencies engaged in the FERC relicensing of the Project.

USDA Forest Service (USFS)

The Colville National Forest Plan (CNFP) guides natural and cultural resource management activities on USFS-managed lands and waters and establishes management standards and guidelines. It describes resource management policies and prescriptions, levels of resource

production and management, and the availability and suitability of lands for resource management (USFS 1988b). The CNFP is currently being updated by the Colville National Forest (CNF) and is scheduled to be complete in 2007. Changes to the CNFP, as amended, may affect recreation-related management within the Project vicinity. Recreation-related goals of the existing CNFP include the following:

- Provide for a broad spectrum of developed and dispersed recreational opportunities that meet public demand.
- Provide a trail system adequate to meet day and overnight use demand for all different classes of trail users.
- Provide Forest visitors with visually acceptable scenery, consistent with the management use and public demand.
- Maintain and protect those characteristics of the segment of the Kettle River flowing through the Forest that make the river eligible for inclusion in the Wild and Scenic River System.
- Protect and preserve significant prehistoric and historic sites, structures, and objects for the future enjoyment and education of the public.
- Preserve the natural conditions and outstanding opportunities for solitude in the Salmo-Priest Wilderness Area.
- Provide and manage for a diversity of habitats sufficient to maintain viable populations of all vertebrate species, and populations adequate for the consumptive and non-consumptive demands of the public.
- Provide a diversity of high quality aquatic habitats that ensures viable populations of fish in sufficient numbers to meet angler demands.
- Achieve a land ownership pattern that improves resource management and administration, and provides for uses that are in the public interest and cannot be provided on private land.
- Provide for safe, efficient, and environmentally acceptable access to Forest lands.
- Provide cost-efficient fire protection and law enforcement integrated with other resource management objectives.

The CNFP also describes the desired future condition of USFS-managed lands in 10 years, as well as 50 years, given the anticipated implementation of actions towards these recreation-related goals. Specific to recreation use and management, the 10-year desired future conditions include the following:

- The overall character of the CNF will be very similar to what it is now, with some changes starting to become visible.
- Existing developed recreation sites will be properly used within their design constraints, and the Sullivan Lake Campgrounds will be expanded to handle increased use of sites around the lake.

- The majority of dispersed recreation use will continue to occur on or near roads or high standard trails.
- The existing trail system will be expanded based upon public demand.
- The existing nordic (cross-country) trail system will be expanded by 20 to 30 percent, there will continue to be 200 to 300 miles of CNF roads groomed for snowmobile use, and the permit for the 49 Degrees North Ski Area will be expanded to provide facilities to meet demand.
- A wide variety of recreation opportunities will be provided, at a low unit cost, to meet demand.
- The principal access roads will be readily identifiable, and approximately 25 percent of the existing roads will be closed.
- Semi-primitive non-motorized, and semi-primitive motorized areas will be maintained without any intrusions.
- The USFS-managed portion of the Kettle River will retain the characteristics that make it eligible for inclusion in the Wild and Scenic River System.
- Visually, the CNF will appear much as it does today, especially along the important travel corridors.
- The Salmo-Priest Wilderness will continue to meet the attributes of a wilderness area.

Looking 50 years into the future, the desired conditions of the CNF specific to recreation use and management include the following:

- The overall character of the Forest will continue to improve.
- Additional developed recreation sites will be added, and existing sites will have had some major reconstruction and design changes to facilitate public needs and meet demand.
- The principal road systems will be complete with improved or paved surfaces, and approximately 34 percent of existing roads will be closed.
- Dispersed recreation use will have increased substantially.
- A much larger trail system will be in place, and most trails will show significant public use.
- Winter recreation will have increased in importance, and more designated trails, routes, and trailhead facilities will be available.
- The 49 Degrees North Ski Area will have been expanded to maintain competitiveness and accommodate increased demand.
- The Forest will continue to provide highly diverse recreation opportunities for all users and continue to maintain and develop “partnerships” to reduce costs and to provide increased diversity of uses.

- Semi-primitive non-motorized and semi-primitive motorized areas, as originally identified, will be maintained to retain their Recreation Opportunity Spectrum (ROS).
- Visually, the areas along the primary travel routes and riparian areas will be very pleasing and will appear as stands with a mixture of tree sizes.

USDI Bureau of Land Management (BLM)

The BLM's Spokane District Resource Management Plan (RMP) (BLM 1985) does not discuss recreation-specific management of BLM-managed parcels within the Project vicinity; however, these parcels are generally managed for dispersed recreational use (J. Spessard, BLM Adjudicator, personal communication, February 2006).

Washington State Interagency Committee for Outdoor Recreation (IAC)

The primary purpose of the 2002 Assessment of Outdoor Recreation in Washington State, a SCORP document, is to provide information on outdoor recreation issues and opportunities to decision-makers (IAC 2002). The following are listed as statewide recreation concerns that may also be considered in the Project area over the next several years:

- There is a need to provide better-managed lands and facilities supporting virtually all outdoor recreation categories.
- Linear (i.e., trail-based) activities (e.g., walking, hiking, biking) are the most popular activities.
- Nature and natural settings play a vital role in many recreational activities and pursuits.
- Preserving habitat for fish and wildlife is important due to high statewide participation rates in nature-dependent activities (e.g., wildlife viewing, photography, hunting, fishing, etc.).
- Acceptable means of financing the operations and maintenance of public lands and facilities need to be determined.
- Improved public recreation data and facilities inventories are needed to ensure effective utilization of public resources.

The IAC's 2002 Assessment also provides an analysis of the need for recreation facilities in Washington. This analysis is based on actual recreation participation and an inventory of land and recreation facilities; preference is not a factor in this assessment. Conclusions of the needs analysis that are relevant to the Project include the following:

- Most outdoor recreation takes place close to home on local lands.
- Federal, state, and private lands may experience fewer numbers of visitors (compared to the past decade), but will likely still experience considerable use levels and the challenges (e.g., crowding, conflict, displacement, resource degradation, etc.) that accompany these use levels.

- Public frustration with recreation agencies seems to indicate a need for better communication among providers and users.
- Reports of increased crowding and conflict in virtually all types of recreation indicate a need to provide better-managed land and facilities.

Additionally, the IAC's 2002 Assessment provides specific recommendations for hydroelectric project licensees, including the following:

- Enhance recreational opportunities with new trails, walkways, and paths for pedestrian and bicycle use.
- Manage dispersed shoreline camping.
- Improve access for water-based recreation activities.
- Provide additional opportunities for non-consumptive recreation activities (e.g., wildlife viewing, photography, etc.).
- Improve operations and maintenance at existing and new recreation sites.

Pend Oreille County

The Pend Oreille County Comprehensive Plan was finalized in October 2005. The Washington State Growth Management Act requires that county and city comprehensive plans include a parks and recreation element, with some exceptions. In addition to providing supply, demand, and needs information, the parks and recreation element of a comprehensive plan should also provide goals and policies to guide recreation-related development and management. The parks and recreation element of the Pend Oreille County Comprehensive Plan includes the following recreation-related goals (Pend Oreille County 2005):

- Provide public facilities at Pend Oreille County parks and designated public access sites that enable and enhance a fulfilling experience for visitors and residents, including recreation vehicle (RV) park areas designed to accommodate the largest RVs.
- Generate revenue to provide for the maintenance, future development, and use of Pend Oreille County parks as a year-round facility.
- Support the establishment of a countywide river and lake park system.
- Support the identification and promotion of the full range of public and private recreational opportunities in the county for local residents and visitors.
- Support the designation of the North Pend Oreille Scenic Byway and the Selkirk Loop, and the development of the Sweet Creek Recreation Area.
- Establish a permanent County Parks and Recreation Department.

The Pend Oreille County Comprehensive Plan also outlines 11 parks and recreation-related policies intended to help meet these goals. Some of these policies may potentially affect the Project area over the next several years and include:

- Support local efforts to integrate local parks and recreation planning with economic development strategies and priorities to promote recreational tourism opportunities.
- Adopt regulations to implement National Scenic Byway requirements on designated scenic corridors.
- Update the Boating Ordinance 97-27, as necessary.
- Review and update standards to guide the development of public and privately owned and operated commercial RV parks, campgrounds, and related facilities to address water and sanitary sewer requirements, access requirements, and permitted densities and uses.
- Identify priorities for designating, signing, striping, and/or constructing bike lanes, pedestrian paths, and/or routes.
- Support the design and installation of signage to identify Scenic Byways and viewpoints, boat accesses, and designated recreation areas.
- Collaborate with the USFS and other public resource agencies and managers to inventory recreational opportunities and promote the shared use and full enjoyment of publicly owned land in the county.

Towns of Metaline and Metaline Falls

Neither of the town comprehensive plans for Metaline (Town of Metaline 1996) or Metaline Falls (Town of Metaline Falls 1996) have recreation-specific elements. However, both town comprehensive plans identify Pend Oreille River-specific goals that may affect the Project area. These goals include:

- Provide increased public access to the Pend Oreille River with the support of local, state, and federal agencies.
- Manage the level and flow of the Pend Oreille River to enhance recreational opportunities, wildlife, the fishery, and water quality, while recognizing power generation requirements.

Both plans also call for the effective involvement of local residents in the ongoing management of the Pend Oreille River.

Washington Department of Transportation (WDOT)

The North Pend Oreille Scenic Byway consists of 27 miles of State Route (SR) 31 from its junction with SR 20 to the U.S.-Canada border. This scenic byway is also part of the larger International Selkirk Loop. Local communities, stakeholders, and land management agencies cooperated on the development and ongoing implementation of the corridor management plan (under the direction of a citizen's advisory board). The vision of the corridor management plan (WDOT 2003) is as follows:

“The North Pend Oreille Scenic Byway provides visitors with an opportunity to discover and interpret the legacy that local pioneers have left for modern-day

residents while preserving the all-important life styles of those residents. Mining, logging, and the production of hydroelectric power represent the historic and modern-day economic base for this area. The Scenic Byway offers access to one of the more active artist and performing arts communities in the Pacific Northwest. Those who follow the Byway along the Pend Oreille River are greeted by vistas of snow-capped mountains, rural villages, and viewing sites for wildlife, cultural legacy interpretive sites, and all backdropped by a unique natural environment. This Byway is a scenic highway connecting Washington, British Columbia, and Idaho.”

The corridor management plan outlines a set of goals and objectives that cover transportation and land use, economic development and tourism, heritage resources, and plan involvement and coordination. These goals include:

- Travel safety for visitors, local residents, and industry.
- Scenic Byway improvements that complement existing natural and developed environments and support land uses and activities desired by the local community.
- Expanded opportunities for economic development and tourism that are sensitive to the needs and values of the local community.
- Increased awareness and appreciation of heritage resources by visitors and community residents.
- Protection and enhancement of all heritage resources.
- Community-based planning process that promotes a high level of community involvement and ownership in plan development and supports collaboration in plan implementation.

The corridor management plan is not a regulatory document; however, it is intended to be a reference document that entities (including local communities, private land owners, WDOT, Pend Oreille County, and the USFS, among others) use to guide stewardship activities along the scenic byway corridor.

Specific to the Project area and vicinity, the International Selkirk Loop Corridor Management Plan, of which the SR 31 scenic byway is a component, identifies multiple key byway sites and proposes development at each. Byway sites in the Project area and vicinity, primarily along SR 31, and proposed development actions at each include the following:

- USFS Crescent Lake and SCL Boundary Vista House — Vegetation treatments and possible realignment of curve to improve views.
- Abercrombie-Hooknose Viewpoint — Construct a paved parking area and provide interpretive signage.
- USFS Mill Pond Flume Historic Site — No proposals.
- Crawford State Park - No proposals.

- Cutter Theater and Museum in Metaline Falls — Upgrade lighting, audio, and visual aides.
- SR 31 Sweet Creek Falls Site — Construct parking area, trail, picnic sites, restroom, and provide interpretive signage (being completed in phases).
- SR 31 Eagle’s Nest View Site — Construct a vehicle pull-out and parking, and provide interpretive signage (completed).
- Pend Oreille PUD Box Canyon Dam Recreation Area (Campbell Park) — Provide improved signage.

6.1.3. Study Area — General

The proposed study area for the RRS includes lands and waters within and adjacent to the Project boundary. The focus of this study will be on lands within the Project boundary; however, adjacent public and private lands will also be evaluated, as appropriate, based on the needs of each RRS study element. The study area is further described in each study element.

Lands between the reservoir shoreline and major adjoining parallel roads and/or highways (SR 31 and County Road 2975, for example) will be included where public access to the reservoir is being investigated (refer to Dispersed Recreation Use, Access, and Condition Analysis study element).

For the Regional Recreation Analysis study element, the regional study area boundary will represent the likely extent of substitute recreation opportunities (considering travel times, setting, facility conditions, and quality of experience, among other factors) and includes not only northeastern Washington, but also the nearby northern Idaho panhandle and southern British Columbia along the International Selkirk Loop corridor. A component of the proposed methodology of the Regional Recreation Assessment is to specifically define an appropriate regional boundary.

In its official study request filed with FERC, the USFS suggested that the study area for the RRS “should at a minimum encompass the area described in the Project Pre-Application Document...” (USFS 2006b, page 2). However, SCL believes the study area needs are different for each RRS component and thus has proposed differing study areas for the various study elements. The study areas are described in detail in the respective sections of the RRS.

6.1.4. Study Elements

This overall RRS is comprised of the following five study elements:

- Recreation surveys
- Regional recreation analysis
- Dispersed recreation use, access, and condition analysis
- Future recreation use analysis
- Recreation carrying capacity analysis

Each of these study elements is described below.

Recreation Surveys

Study Element Goals and Objectives

The overall goal of this RRS element is to provide information necessary to define and analyze current recreational use and opportunities at the Project and in the nearby vicinity, as well as to project future recreational use, demand and needs in the Project area. The main objective of the Recreation Surveys is to characterize existing levels and patterns of recreational use and visitor characteristics, preferences, needs and attitudes in the Project area and vicinity. Specific objectives of the Recreation Surveys are as follows:

- *Quantify existing recreational use in the Project area* — Identify the amount of use, activity types, daytime and overnight use, and spatial and temporal distribution of existing use within the Project area, including developed recreation sites, dispersed recreation use, and boating on the reservoir.
- *Quantify visitor perceptions relative to Project-related recreation facilities, use areas, and opportunities* — Collect information on visitor characteristics, attitudes and preferences, as well as existing and/or anticipated future unmet need of the Project area's primary visitor populations (e.g., boaters, picnickers, sightseers, anglers) and populations who may come in the future.

The Recreation Surveys methodology consists of: (1) reviewing other existing regional survey and public input data, (2) conducting visitor counts, (3) conducting visitor questionnaires, and (4) compiling and summarizing Recreation Surveys results into a report. Two questionnaires are proposed: (1) a Project-area visitor questionnaire, and (2) an area resident questionnaire plus focus groups. Information gathered during the Recreation Surveys study element will be used in conjunction with other RRS elements to help evaluate the need for additional public access and/or recreation facilities in the Project area. The follow-on recreation needs analysis and synthesis (part of the integrated resource analysis described in section 1.2.5 of this PSP) will synthesize RRS study element results, and the results of other related resource studies, to help identify existing and future recreation needs related to the Project.

Need for Study Element

Summary of Existing Information

Available recreation use data for the Project area is minimal and potentially inaccurate. Informal visitor counts are occasionally conducted at SCL-managed recreation areas, and every six years, SCL is required to report recreational use levels and capacity at the Project to meet FERC Form 80 reporting requirements.

Informal recreational use counts were conducted at the Forebay Recreation Area during 2002 and for selected months during 2003 and 2004 (Table 6.1-1). In 2002, the only year in which data were collected for six months, approximately 3,833 visitors were documented at the Forebay Recreation Area, with peak recreational use levels occurring in July and August. Again

in 2003 and 2004, site use peaked in July and August. Anecdotal information suggests that on peak-use weekends during the summer season, the Forebay Recreation Area experiences use levels beyond its current design capacity (L. Johnson, SCL, personal communication, April 2005). Based on the limited data, presented in Table 6.1-1, use levels at the Forebay Recreation Area appear to be declining; however, given the limited nature of the data, this decline may or may not be a long-term trend and may not be accurate. Facility capacity is discussed later in the Recreation Carrying Capacity Analysis study element.

Table 6.1-1. Monthly use estimates for the Forebay Recreation Area (2002–2004). (Source: SCL 2005)

Year/Month	Overnight Campsite Use	Vehicles	Boat Launch/ Dock Use	Estimate of Total Visitors
<u>2002</u>				
May	290	344	78	718
June	104	134	46	322
July	213	503	140	1,236
August	545	636	242	1,116
September	163	177	57	400
October	18	21	9	41
Total ¹	1,333	1,815	572	3,833
<u>2003</u>				
May	128	209	59	489
July	139	359	126	959
August	268	361	130	767
October	9	14	6	31
<u>2004</u>				
July	141	255	104	704
August	163	255	114	673
September	92	135	32	219

Note:

1 Total use available for 2002 only. Use counts for select months only are available for 2003 and 2004.

To date, similar recreation use counts have not been completed at SCL’s Tailrace Recreation Area or Vista House. The Tailrace Recreation Area was closed during 2002 and 2003 because of security requirements. Additionally, SCL has not completed on-water boat counts or counts at dispersed recreation sites in the Project area. For FERC Form 80 reporting requirements, use estimates were made for total daytime and nighttime recreation days (RD) for the entire Project, as well as for each site element (e.g., picnic area, campground, boat launch, viewpoint, etc.). RDs are FERC’s preferred unit of recreation measurement. An RD is a visit for any length of time to a recreation area during a 24-hour period. Use estimates in RDs are provided in Table 6.1-2 for the past three Form 80 reporting periods.

Table 6.1-2. Total estimated annual recreation days for the Vista House, Tailrace Recreation Area, and Forebay Recreation Area. (Source: SCL 1991, 1996, and 2002)

	Recreation Days	
	Annual Total	Peak Weekend Average
<u>1991</u> ¹		
Daytime	20,251	543
Nighttime	-	-
<u>1996</u>		
Daytime	21,741	1,173
Nighttime	127	16
<u>2002</u>		
Daytime	4,503	124
Nighttime	3,231	95

Note:

1 Nighttime recreation use not reported on 1991 FERC Form 80.

The data summarized in Table 6.1-2 appear to indicate that recreational use levels at the Project have declined between 1991 and 2002. However, a review of the completed FERC Form 80s and associated data collection methodologies indicates that an improper methodology (in part due to confusion caused by Form 80 reporting requirements) appears to have been used to compile the total recreational use estimate for the 1991 Form 80. In addition to use estimates for specific site elements of a recreation area, Form 80 also requires an estimate of total annual use for the Project. The specific use estimates of each site element on the 1991 Form 80 were summed to determine the total annual Project recreational use, which likely counted individual visitors more than once (e.g., a visitor who used the boat launch, visited the overlook, and was camping at the Forebay Recreation Area may have been counted three times instead of just once), leading to an inflated total use level in the 1991 Form 80 filing.

The 1996 total use estimate for the Project was determined by applying a percent increase to the 1991 Form 80 estimate. As a result, the methodological miscalculation of the 1991 total use estimate was carried over into the 1996 total use estimate. The 2002 Form 80 may be a more accurate indication of current use levels at the Project at that time; however, security restrictions may have also caused the total estimates to be lower than for other years.

Aside from the visitor use level data presented in Tables 6.1-1 and 6.1-2, no other Project area recreation use level information has been collected to date for SCL-managed recreation sites. Additionally, no information has been collected regarding visitor characteristics, preferences, and attitudes at any of the recreation sites in the Project area.

Need for Additional Information

SCL currently collects some visitor use level information at the Forebay Recreation Area; however, most areas of the Project have not been adequately surveyed or analyzed for relicensing purposes. The purpose of the Recreation Surveys study element is to better analyze

current use and visitor preferences within the Project area, with special emphasis placed on recreation-related data necessary for FERC relicensing. The Recreation Surveys study element focuses on visitors at existing developed recreation sites in and/or adjacent to the Project area, as well as at more primitive, dispersed recreation use areas. In addition to collecting visitor use information, the Recreation Surveys study element also focuses on understanding local resident use of the Project area and vicinity for recreational purposes, as well as understanding changing resident characteristics.

The results of the Recreation Surveys will help SCL and relicensing participants better understand how the Project area and vicinity are used for recreational purposes and establish a baseline of visitor data that may be compared in future years for monitoring purposes during the term of the potential new FERC license. Data collected during the Recreation Surveys will also be used in other RRS elements, including the Regional Recreation Analysis, Recreation Carrying Capacity Analysis, and Future Recreation Use Analysis, as well as in the follow-on recreation needs analysis and synthesis that will synthesize the results of all elements of the RRS and identify existing and anticipated future recreation needs. All of this information will be used to develop a proposed RMP for the Project. Responses to visitor and resident survey questions and focus group workshop questions will also be used in the Aesthetic/Visual Resource Study to document the public's perception of various aesthetic conditions that exist in the Project area.

Detailed Description of Study Element

Study Area

The study area for the Recreation Surveys study element includes the lands and waters within and adjacent to the Project boundary and its vicinity, local communities near the Project, and existing survey and public input data gathered within the broader region.

The focus of this assessment will be the Project area including lands (dispersed shoreline use areas and trails) and waters of the Project and adjoining public and private lands adjacent to the Project. Developed recreation sites in the Project area include:

- SCL Vista House
- SCL Tailrace Recreation Area
- SCL Forebay Recreation Area/Boat Ramp
- BLM Boundary Recreation Area
- Town of Metaline Waterfront Park/Boat Ramp
- Pend Oreille County PUD Campbell Park/Boat Ramp

The Recreation Surveys data-gathering effort will address public use and recreation sites in the vicinity of the Project used by local residents and other visitors who may also visit the Project area, including USFS Crescent Lake Recreation Area (boating access road and developed picnic sites), SR-31 Sweet Creek Falls Rest Area, and residents of communities near or along Boundary Reservoir including Metaline, Metaline Falls, and Ione in Washington, and Salmo and Trail in British Columbia.

Existing regional survey and public input data, such as the WA SCORP (as updated), surveys conducted in Pend Oreille County, and USFS surveys conducted in the Colville National Forest (as updated), will also be reviewed.

Proposed Methodology

The Recreation Surveys methodology consists of four tasks: (1) reviewing existing regional survey and public input data, (2) conducting visitor counts, (3) conducting visitor questionnaires, and (4) compiling and summarizing Recreation Surveys results into a report. Each of these components is discussed below.

The Recreation Surveys will be conducted over a minimum 12-month period of time; beginning in 2007 and ending in 2008 (additional detail is provided under “Schedule,” below). The schedule and duration of the Recreation Surveys may potentially need to be adjusted based on factors that may influence recreation use levels in the Project area including forest fires, road closures, security restrictions, and/or extreme weather conditions. Additionally, the focus of data collection efforts will be during the primary recreation season, generally considered May through October for the Project area, as this is when the Project area receives the majority of visitor and resident use.

All forms for the Recreation Surveys (questionnaire forms, user and activity count forms, registration forms, other detailed data collection forms, etc.) and related survey methodologies (scheduling, logistics, frequency, number of survey days, targeted number of surveys, etc.) will be reviewed with relicensing participants prior to implementation. Issues that are raised will be resolved prior to implementation, to the extent possible.

Review of Other Existing Regional Survey and Public Input Data

In coordination with the Regional Recreation Analysis study element, existing and new/ongoing regional visitor survey information, as well as regional public input (non-survey input such as focus groups), will be reviewed as available for pertinent information related to public access and recreation use in the Project area and vicinity, as well as the region. Sources of information to be reviewed include:

- Colville National Forest National Visitor Use Monitoring (NVUM) Results (USFS 2004).
- Additional USFS NVUM survey results from the USFS as available (should be available in 2009).
- Pend Oreille Valley Tourism and Marketing and Development Assessments (various reports) (Dean Runyun Associates 2005).
- County of Spokane Comprehensive Plan – Parks, Recreation and Open Space Element, relevant survey or public input, as available (County of Spokane 2006).
- City of Spokane Comprehensive Plan – Parks, Recreation and Open Space Element, relevant survey or public input, as available (City of Spokane 2001).

- County of Pend Oreille Comprehensive Plan – Parks, Recreation and Open Space Element, relevant survey or public input, as available (Pend Oreille County 2005).
- Pend Oreille County PUD Box Canyon Hydroelectric Project FERC License Application, relevant survey or public input, as available (Pend Oreille County PUD 2000).
- University of Idaho recreation and tourism surveys or studies in the region.
- SR 31 border crossing data – U.S. Border Patrol anecdotal data or other information, as available.
- An Assessment of Outdoor Recreation in Washington State (a SCORP document) (IAC 2002 and 2003).
- Ongoing IAC statewide recreation survey data by CTED tourism regions (should be available in 2007).

The regional survey and public input sources listed above will be used to help characterize use levels and visitor characteristics in the region and how these characteristics may potentially affect recreational use in the Project area and vicinity in the future. Some questions used in the regional data collection efforts listed above will also be considered in the Visitor Questionnaires (described below) to determine if similarities and/or differences exist between regional responses and Project area and vicinity visitor responses.

Visitor Counts

The objective of visitor counts is to establish an estimate of existing visitor use levels and activity participation in the Project area and vicinity particularly at recreation sites of interest. The focus of visitor counts will be on SCL-managed recreation sites and use areas at the Project, dispersed reservoir shoreline use areas, and the reservoir surface area (i.e., watercraft use). Less intensive visitor counts will be conducted at non-SCL-managed recreation sites in and/or adjacent to the Project. Visitor count methodologies are described below for the primary SCL-managed sites (Vista House, Tailrace Recreation Area, and Forebay Recreation Area), as well as those in the Project area and vicinity (Metaline Waterfront Park, Campbell Park Boat Ramp, Crescent Lake Recreation Area, SR-31 Sweet Creek Falls Rest Area, dispersed shoreline use areas, and the reservoir surface).

SCL-Managed Recreation Sites

At the three SCL-managed recreation sites, a combination of on-site visitor counts and visitor registries will be used to gather existing use information. Given an adequate sampling schedule, on-site visitor counts are an effective and generally accurate method of collecting recreation and public use level information (Watson et al. 2000). On-site counts coupled with the use of visitor registries are a particularly efficient and potentially more accurate method of developing use level estimates (Hornback and Eagles 1999). On-site visitor counts typically involve the observation of visitors to a recreation site by trained field researchers for a specified period of time. Visitor registries are forms that visitors use to self-record their visit to a recreation site. Visitor registries are currently used at both the Vista House and Tailrace Recreation Area

(currently at the Visitor's Gallery only, but could be expanded to include the Security Gate entrance as well).

During on-site visitor counts, the following types of information, among others, will be recorded on a standardized count form (to be developed prior to field work):

- Code #, location, date, time, and weather
- Number of vehicles entering/exiting site
- Number of parking spaces occupied
- Number of campsites occupied (Forebay Recreation Area only)
- Boat launch use and watercraft type (Forebay Recreation Area only)
- Number of people observed
- Activities observed, including number of participants per activity
- Estimated compliance rate with visitor registry
- Estimated length of stay of visitors to site (day use only)
- Other anecdotal information (e.g., facility issues, visitor conflict, etc.)

Visitor count periods will be scheduled for 2- to 4-hour periods of time (as needed to collect adequate data) to adequately observe on-site use. On-site visitor count periods will also be scheduled during the Recreation Surveys data collection period using a stratified (by season and day) random sampling technique. Sampling frequency will include an adequate number of sample periods and will be scheduled to ensure that collected data can be generalized over a one-year period of time for a statistically accurate use estimate.

The visitor registries currently being used at both the Vista House and Tailrace Recreation Area will be modified to include the following information:

- Date of visit
- Number of people in group
- Zip or postal code of primary residence
- First visit to Project area or recreation site

Other information that is currently being collected on the visitor registries (name, address, and comments) may still be used on the new visitor registry forms at SCL's discretion, though this information will likely not be used to generate use estimates. Additionally, at the Forebay Recreation Area (currently no visitor registry), a new visitor registry form for the campground will be developed. At a minimum, this form will include the following:

- Date of visit
- Intended length of stay
- Number of people in group

- Zip or postal code of primary residence
- First visit to Project area or recreation site

Additional brief questions may also be considered as long as the registry form does not become too lengthy.

As an example, the campground visitor registry may use a card format that includes a portion that is placed on the vehicle’s dashboard (or other location) and a portion that is collected on a daily basis (this portion will have the information listed above).

On-site count and visitor registry methods are summarized by recreation site in Table 6.1-3. All data collected through the on-site visitor counts and visitor registries will be compiled and summarized by site, season, and for the year-long Recreation Surveys period or as amended.

Table 6.1-3. Summary of on-site count and visitor registry methodology for SCL-managed recreation sites in the Project area.

Recreation Site	On-Site Counts	Visitor Registry	Other
Vista House	Yes, per predetermined sampling schedule.	Yes, modified to include new information. Compliance rate will also be monitored during on-site counts.	- -
Tailrace Recreation Area	Yes, per predetermined sampling schedule. Sampling schedule at this site may be modified if vehicle/ visitor counts are performed at the Project access road gatehouse.	Yes, modified to include new information and a second registry at the Security Gate entrance. Compliance rate will also be monitored during on-site counts.	During the Recreation Surveys period, SCL staff will keep a record of group tours of the Visitor Gallery/ Machine Hall, including date, group origin, and number of people in the group.
Forebay Recreation Area	Yes, per predetermined sampling schedule.	Yes, for campground and boat ramp areas.	Number of watercraft in Forebay area will also be counted during routine on-site visitor counts.

Non-SCL-Managed Recreation Sites

Similar to the SCL-managed recreation sites, periodic on-site visitor counts and activity observations will be performed at Metaline Waterfront Park, Campbell Park Boat Ramp, Crescent Lake Recreation Area, and SR-31 Sweet Creek Falls Rest Area. A similar on-site count methodology to that used at SCL-managed recreation areas (described above — except for registries) will be used at these other recreation sites. The focus of on-site counts at Metaline Waterfront Park and Campbell Park Boat Ramp will be on use of the reservoir and the boat launching facilities at these locations, other shoreline uses such as fishing or swimming, and watercraft use and type. Non-shoreline-related activities at these sites will be described based on

existing quantitative and/or anecdotal information collected from the Town of Metaline and Pend Oreille County PUD, such as observed peak use conditions at locations throughout these sites. For Crescent Lake Recreation Area and SR-31 Sweet Creek Falls Rest Area, the focus of the effort at these sites will be on collecting data on Scenic Byway-related use and visitor use linkages to the Project, if any. The BLM Boundary Recreation Site is discussed below.

Dispersed Recreation Sites and Use Areas

While limited opportunities currently exist for dispersed shoreline recreation, use will be monitored at well established sites that have been identified by SCL through other study elements. Because most existing dispersed shoreline sites and use areas can only be accessed by watercraft, dispersed shoreline use counts will be scheduled to coincide with on-water counts (described below). At a minimum, the following count information will be recorded for each identified dispersed use site or area:

- Location, date, time, and weather
- Number of people observed at site
- Activities observed, including number of participants per activity
- Other anecdotal information (e.g., facility issues, visitor conflict)

Use counts at the BLM Boundary Recreation Site will be combined with dispersed use counts and on-water counts because this site is easier to access by watercraft than by vehicle on land. Quantitative and/or other anecdotal information as available from BLM will also be collected for this site, as well as other shoreline areas managed by BLM. The condition of dispersed sites and use areas will be addressed in the Dispersed Recreation Use, Access, and Condition Analysis.

Reservoir Surface Area

To estimate watercraft use and type on Boundary Reservoir, periodic on-water counts will be performed. During on-water counts, the following types of information will be recorded on a standardized count form (to be developed prior to field work):

- Date, time, and weather
- Number of watercraft observed by type and location on the reservoir
- Number of people per watercraft
- Activities observed, including number of watercraft/participants per activity
- Other anecdotal information regarding watercraft use

On-water counts will be conducted from watercraft on Boundary Reservoir. These counts will be completed by sweeping directional counts of the reservoir surface (e.g., from north to south or south to north along the entire reservoir surface area), as this methodology will help minimize potential double-counting of watercraft. To facilitate data collection and summary, the reservoir surface area will be divided into geographic zones (e.g., upper reservoir, lower reservoir, canyon area, forebay area, etc.). On-water count periods will be scheduled during the Recreation Surveys data collection period when boat ramps on Boundary Reservoir are fully operational

using a stratified (by season and day) random sampling technique. An adequate amount of on-water time (per count period) will be scheduled to complete all on-water counts, including dispersed shoreline use counts. Additionally, an adequate number of sample periods will be scheduled to ensure that collected data can be adequately estimated over a 1-year period of time for a relatively accurate use estimate.

Private RV Resorts/Campgrounds and Mill Creek/Sullivan Lake Campground Concessionaires

Private recreation business owners/operators near the Project (SR 31 corridor) and concessionaire operators of nearby USFS campgrounds (Mill Pond and Sullivan Lake) will be informally surveyed to identify the following information, as available:

- Inventory of facilities including any plans to expand facilities and services
- Facility use levels and capacity
- Season of operations
- Visitor information including origin, length of stay, party size, activities, etc.
- Anecdotal information about trends
- Fees charged and average funds expended by RV and tent campers

Project Area Visitor Questionnaires and Area Resident Questionnaires/Focus Groups

Visitor questionnaires will be used to collect more detailed information about visitors to the Project area and their perceived preferences and needs. Questionnaires are particularly useful in recreation data collection and monitoring because their cost is relatively low in comparison with other methods, they allow a large amount of information to be collected, their results can be generalized to describe the sampled population, and their results tend to be highly accurate. Questionnaires do have limitations that need to be addressed, however, including lack of control over individual responses resulting from potential misconceptions and misunderstandings of survey questions. These limitations can be minimized through appropriate planning and pre-testing (Pizam 1994).

Two questionnaires are proposed: (1) Project area visitor questionnaire, and (2) area resident questionnaire. The Project area visitor questionnaire will be used at recreation sites and use areas in and adjacent to the Project to gather information from visitors at these sites. The area resident questionnaire will be used to gather information from area residents (towns or areas near Metaline, Metaline Falls, Ione, Salmo, and Trail) who may or may not use the Project area for recreation. In addition to the area resident questionnaire, activity focus groups will also be used to gather information related to area residents and their use of the Project area for various recreation activities. Each of these questionnaires is discussed in more detail below.

Project Area Visitor Questionnaire

The objective of the Project Area Visitor Questionnaire is to assess the attitudes, perceptions, needs and characteristics of visitors to developed recreation facilities and dispersed recreation use areas in the Project area. The Project Area Visitor Questionnaire may be potentially administered using a variety of techniques including on-site, telephone, internet, and mail,

among others. Given the limited number of public access and recreation sites in the Project area, the visitor questionnaire will likely be distributed on site using an intercept or drop-off survey method that tends to increase the response rate by personally communicating the importance of the survey to participants and assuring their confidentiality (Salant and Dillman 1994). A well-planned intercept / drop-off questionnaire will also likely result in an adequate response rate for purposes of this analysis (Pizam 1994, Salant and Dillman 1994). Anticipated questionnaire format and topics, sampling methodology, and questionnaire protocol are discussed below.

Questionnaire Format and Topics — The format and topics will vary between developed facilities and dispersed use area visitor questionnaires. Participation in a questionnaire is greatly affected by the details of the questionnaire, including surveyor message, cover design, and format. The length of the questionnaire will need to be limited to encourage on-site participation and a higher response rate. If the length of the questionnaire is not conducive to on-site administration (e.g., too time consuming), a different method will be considered (e.g., mail, combination on-site and mail, or internet). The questionnaire will include topics and questions that are typically asked of visitors to FERC-licensed hydroelectric projects, as space allows. Questionnaires will differ between developed facilities and dispersed use areas. The questionnaires will include questions related to the following topics:

- Primary destination/other sites visited
- Primary and secondary activities
- Group size
- Origin of main residence by Zip or postal code
- Other regional recreation areas used
- Alternative recreation destinations to the Project by zone (5 miles, 25 miles, 50+ miles)
- Visitor and facility conflicts or concerns
- Perceived crowding levels
- Changes to use patterns due to crowding
- Facility and service adequacy and needs
- Demographics
- Waste options and water quality
- Reservoir pool level fluctuation concerns
- Access adequacy and needs
- Reasons for coming to the area
- How visitors heard about the area
- Awareness and use of specific portions of the Project area
- Positive or negative attributes of the existing aesthetic landscape at selected Key Observation Points (KOPs)

- Average funds expended by their party during the visit and willingness to pay questions
- General comments (will be encouraged)

In addition to survey length and relative order of questions, the format of the questionnaire is also important to the overall success of the study. Questionnaires are typically produced as booklets, on good quality paper using professional printing techniques. The booklet format can be produced in varying sizes, makes use of double-sided printing, and can be modified to incorporate stimulating graphics, if needed. Other questionnaire formats may potentially be acceptable.

A good questionnaire cover (assuming a booklet format is used) helps stimulate interest in participating in the survey process and can significantly influence response rates (Salant and Dillman 1994, Watson et al. 2000). A well-designed cover typically includes the following four components:

- An informative title—the title will convey as simply as possible the topic of the questionnaire; it should be memorable and neutral, not misleading or biased.
- A graphic design or illustration—a design or illustration helps generate interest; it should be simple and representative of the questionnaire topic.
- The name, address, and logo of the questionnaire’s sponsor(s)—providing the name, address, and logo of the questionnaire’s sponsor(s) helps establish the legitimacy of the survey.
- A unique identification number—each questionnaire will have a unique identification number. Using identification numbers enables completed questionnaires to be linked to an electronic record (database/spreadsheet entry) for Quality Assurance/Quality Control purposes.

A complete map of the Project area and vicinity will be included, possibly on the back of the cover page.

A back cover will be used to elicit additional comments from questionnaire participants (e.g., “Please use this space to provide any additional comments”). The back cover will also include a thank you statement (e.g., “Thank you for your participation”), as well as a contact name and address and/or phone number if participants have further questions/concerns.

Sampling Methodology — The sampling methodology will vary between developed recreation facilities and dispersed use area visitor questionnaires. The benefit of a well designed sample population is the “ability to obtain information from a relatively few respondents to describe the characteristics of an entire population” (Salant and Dillman 1994). The number of visitors included in the sample population will depend on the estimated number of visitors to the Project area. Existing use estimates, such as the 2002 FERC Form 80 data, will be reviewed and adjusted up or down to estimated current conditions based on input from Project operators and others who routinely observe Project area conditions and changes in use patterns through the years.

A large enough sample population will be selected to achieve a reasonable confidence level and sampling error. A 90–95 percent confidence level and 5–10 percent sampling error are typically used in recreation and other social research efforts.

A random sample of visitors will be chosen from the entire population of Project area visitors. A simple random sample “is the selection of items from the population such that each item has an equal probability of being selected” (Watson et al. 2000). To increase the efficiency of selecting a random sample of visitors, a systematic sampling procedure will be used to select potential questionnaire participants. A sample is obtained by randomly selecting the first visitor and then selecting other visitors based on a predetermined interval. For example, instead of continuously selecting a random vehicle/visitor to approach, every third vehicle entering a site would be approached to participate in the questionnaire using this sampling methodology. In areas of lower recreational use (dispersed use areas), a census of all visitors may be selected during survey periods to ensure an adequate number of questionnaires are completed.

Visitors to the Project area will be contacted on multiple days according to a predetermined stratified schedule. The sampling schedule will be stratified proportionally by location (Vista House, Forebay Recreation Area, etc.), season (e.g., peak summer season, early shoulder season, later shoulder season), and by type of day (e.g., weekend day, weekday, holiday). Scheduling assumptions will be reviewed with SCL site managers familiar with seasonal use and trends to confirm percent allocation assumptions. For example, if 75 percent of existing use occurs during the peak summer season, then 75 percent of sample days will be randomly scheduled during the peak summer season. Additionally, if 80 percent of peak summer season use occurs on weekends, then 80 percent of sample days will be randomly scheduled during peak summer season weekends. Using a proportionally stratified sampling methodology tends to be more statistically efficient than a simple random sample, especially when distinct strata are identifiable. This sampling methodology will also be developed to adequately capture all significant user groups (e.g., anglers, reservoir boaters, overnight visitors, sightseers).

A well-designed survey and sampling technique will reduce the potential for non-response bias. The intercept / drop-off method tends to increase response rate by personally communicating the importance of the questionnaire to potential participants. A stratified simple random sampling technique is also proposed, increasing the probability of a representative sample of the population. Additionally, the potential for non-response bias is also reduced by achieving a 90–95 percent confidence level, a 5–10 percent margin of error, and an adequate sample size.

Using all of these methodologies, the potential for non-response bias still exists; however, it is relatively lower and should not have significant impacts on the results. It should be noted, however, that even with these methodologies, some people (potential participants) in the population will not be represented. Two types of people in particular will not be represented: (1) those people in the population who currently do not use the Project area but might in the future, and (2) those people who may have visited the Project area in the past, but no longer do so. Acknowledging this fact does not decrease non-response bias, but does address the limitations of this survey methodology. Other methodologies, such as reviewing regional survey and public input data and also statewide regional demand for recreation activities and facilities, will be

employed to help portray the perceptions of other visitors who may not visit the Project area. Additionally, the Area Resident Questionnaire and focus groups should also help gather information on these types of potential past and/or potential Project area visitors.

Questionnaire Protocol – The protocol will vary between developed recreation facilities and dispersed use area visitor questionnaires. Visitors will be contacted regarding participation in the questionnaire at each of the developed recreation sites in and/or adjacent to the Project area according to a predetermined random schedule (see Sampling Methodology, above). A trained visitor survey crew will be responsible for contacting potential respondents. Potential respondents will fill out the questionnaire on-site (where they are contacted). A drop-off location may also be considered for visitors to return their completed questionnaires as they leave the Project area. To help improve response rates, SCL may consider compensating participants with a small incentive award, similar to other surveys conducted in the industry.

Area Resident Questionnaire

Differences in visitor perception, use, activity, and needs may exist between local and vicinity residents and Project visitors from outside of the Project vicinity such as Spokane. These potential differences will be identified and explored through the use of an Area Resident Questionnaire. In addition, focus groups will be used to gather information regarding area resident activity participation (or non-participation) in the Project area. Questionnaire format and topics, sampling methodology, and questionnaire protocol are discussed below.

Questionnaire Format and Topics — The Area Resident Questionnaire will be developed using the same formatting guidelines discussed in the Project Area Visitor Questionnaire. The questionnaire itself will focus on recreation-related issues and needs that apply specifically to area residents in the towns of Metaline, Metaline Falls, Ione, Salmo, and Trail. The survey will also replicate many of the items in the Project Area Visitor Questionnaire so that data from the two groups can be compared.

Sampling Methodology — Area Resident Questionnaire participants will be randomly selected from a list of residents in the Project vicinity. This list will be developed from homeowner associations, county tax records, and/or local phone books. The number of area residents included in the sample population will depend on the total number of residents in the Project vicinity. For purposes of this analysis, the Project vicinity will be limited to Metaline, Metaline Falls, Ione, Salmo, and Trail. A large enough sample population will be selected to achieve a reasonable confidence level and sampling error. A 90–95 percent confidence level and 5–10 percent sampling error are typically used in recreation and other social research efforts.

Questionnaire Protocol — Area Resident Questionnaires will be sent through the mail using the random sampling approach detailed above. Up to three mailings will be sent to potential participants, as is common in mail survey research (Salant and Dillman 1994). The first mailing will include a cover letter, a copy of the questionnaire, and a stamped return envelope. Two weeks after this initial mailing, a postcard reminder will be sent to those individuals who have not returned a questionnaire (tracked via unique questionnaire numbers). Two weeks after the second mailing, a third and final mailing will be sent to those potential participants who have not yet returned a completed questionnaire. This third mailing will include a reminder cover letter, a

second copy of the questionnaire, and a new stamped return envelope. Using multiple mailings will help to ensure an adequate response rate and will also allow for non-response bias statistical-related testing.

Area Resident Focus Groups — In addition to the Area Resident Questionnaires, three focus group meetings will be held with area residents. Focus groups will be defined by activity types, such as hunting, boat and bank fishing, and general recreation use. Names of individuals will be solicited from representatives of sports organizations and the towns of Metaline, Metaline Falls, Ione, Salmo, and Trail. Focus group meetings will be convened in the vicinity of the Project and will allow participants the opportunity to discuss their current use (or non-use) of the Project area and their desired future condition. Aesthetic-related questions will also be asked of focus group participants for use in the Aesthetic/Visual Resource Study. Specific details and logistics of the focus groups will be developed.

Compile and Summarize Recreation Surveys Results

Following completion of the Recreation Surveys data collection effort, data will be analyzed and summarized and a Recreation Surveys report will be prepared. Results will be summarized in text, table, and graphic format, and conclusions will be drawn, as appropriate. The report will provide an overall estimate of recreation use levels in the Project area, as well as site-specific use estimates. Visitor use estimates will be provided in Recreation Days (RD), FERC's preferred unit of recreation measurement. The Recreation Surveys report will also provide a detailed summary of visitor types, characteristics, preferences, needs, and attitudes. Where appropriate, relevant regional survey and public input data will also be incorporated into the Recreation Surveys report to support or counter results obtained in the Project area and vicinity. Tables, charts, and other graphics will be used to visually display the results of the Recreation Surveys. The individual Recreation Surveys study element results will be comprehensively assessed later in the recreation needs analysis and synthesis and development of the proposed RMP for the Project, as appropriate.

Regional Recreation Analysis

Study Element Goals and Objectives

The goal of the RRS is to provide information necessary to analyze current and future recreational use, opportunities, and needs at the Project and in the region. The objective of the Regional Recreation Analysis study element of the RRS is to analyze recreation information related to the supply and demand of regional recreation resources near the Project and to place the Project in the proper regional context. This is an important step in determining the role of the Project area in meeting a portion of regional recreation demand, and in planning for future recreational development, if needed, on or near Project lands.

The following represent objectives that the Regional Recreation Analysis study element is designed to address:

- Define approximate boundaries of the region by zone (likely including the local area, vicinity, more distant areas of Pend Oreille County and potentially adjacent

Washington state counties such as Spokane County, and nearby areas of the northern Idaho panhandle and southern British Columbia within the Scenic Byway corridor).

- Identify similarities, differences and relative significance of the Project area's recreational resources and opportunities within each zone and the broader regional context.
- Document existing regional recreation opportunities by zone including specific facilities, use areas, and capacities.
- Identify regional alternatives to Project area facilities, use areas, and opportunities by zone.
- Broadly assess current use levels for regional recreation opportunities, facilities, and use areas by zone.
- Identify relevant regional trends in recreation participation and demand.
- Understand the role and significance of the Scenic Byway (SR 31) (a component of the International Selkirk Loop) to the region and to the Project area, including existing and projected use of the Scenic Byway and existing and planned facility components and visitor programs.

While the Regional Recreation Analysis is broader in scope (goals and objectives) and geographic context compared to the other study elements, the primary focus will be on Project-related recreational activities and opportunities with a Project nexus.

Need for Study Element

The Project area is one of several water-based recreational resources in the region. The Project area offers recreational opportunities that are similar to other river corridors and/or reservoirs/lakes in the region. The Project area also has the SR 31 Scenic Byway traversing through the Project area, and interpretation and education (I&E) opportunities exist at both Project facilities and along the Scenic Byway. The Regional Recreation Analysis is intended to adequately describe the regional context of the Project from a recreational perspective and to help define the role of the Project in this broader regional context. The Project likely plays a role in helping satisfy regional demand for recreational activities and opportunities. Other regional resources also help satisfy this regional demand.

Summary of Existing Information

The PAD provides a brief summary of regional recreation use areas and facilities (see PAD section 4.8.9 – Regionally or Nationally Important Recreation Areas within the Project Region), as well as regional and national activity participation and demand trends (see PAD section 4.8.3 – Current Recreation Use in the Project Vicinity and Region).

For the PAD, the region was defined as the Pend Oreille River Valley north of Newport and west of the Washington-Idaho border to the Canadian border. While the greater Pacific Northwest region, including Washington, Oregon, Idaho, and British Columbia, has an abundance of outdoor recreation opportunities, the Project region for the PAD was limited to the Pend Oreille

River Valley because outdoor recreation sites and facilities in this area represent the most likely substitute sites for Project vicinity recreation sites (i.e., recreation sites in proximity to and with similar settings and available opportunities to those found in the Project vicinity). Regional facilities and associated opportunities include SR 31 Scenic Byway sightseeing and driving for pleasure, RV and tent camping, picnicking, swimming, day use hiking and bicycling, wilderness backpacking and hiking, whitewater boating, visiting historic and I&E-related sites, wildlife observation and photography, fishing, hunting, and others.

Recreation use areas and facilities of regional significance discussed in the PAD include the following:

- Colville National Forest (USFS):
 - Salmo-Priest Wilderness Area
 - Mill Pond Campground and Day Use Area
 - Sullivan Lake Campgrounds (Sullivan Creek Hydroelectric Project)
 - Noisy Creek Campground and Day Use Area (Sullivan Creek Hydroelectric Project)
 - Edgewater Campground and Day Use Area
 - Old Ruby Ferry (East) Public Boat Launch
 - Lake Leo Campground and Boat Launch
 - Lake Thomas Campground
 - Gillette Campground
 - Lake Gillette Campground
 - Panhandle Campground and Boat Launch
 - Browns Lake Campground and Boat Launch
 - South Skookum Lake Campground and Boat Launch
 - Pioneer Park Campground and Day Use Area
- Little Pend Oreille National Wildlife Refuge (U.S. Fish and Wildlife Service)
- North Pend Oreille Scenic Byway/International Selkirk Loop:
 - Tiger Historical Museum (existing)
 - Ione Riverfront Park (existing)
 - Box Canyon Overlook (existing)
 - Eagle's Nest View Site (proposed)
 - Sweet Creek Falls Site (existing)
 - Metaline Falls Overlook Pocket Park (proposed)
 - Crescent Lake (existing)
 - Abercrombie-Hooknose Viewpoint (existing)
 - Mill Pond Flume Historic Site (existing)
 - Crawford State Park (existing)
 - Cutter Theater and Museum (existing)

- Flume Creek Mountain Goat Viewing Area (WDFW)
- Big Meadow Lake (WDFW)
- Old Ruby Ferry (West) Boat Launch (WDFW)
- Pend Oreille County River Access Site (Pend Oreille County)
- Campbell Park (Box Canyon Hydroelectric Project, Pend Oreille County PUD)
- Manresa Grotto (Kalispel Tribe)
- Kalispel Boat Launch (Kalispel Tribe)
- Ione City Park (Town of Ione)
- Cusick Boat Launch (Town of Cusick)

The list above is not exhaustive but does capture most nearby and/or regionally significant recreation use areas and facilities that offer similar activities and opportunities to those available in the Project area. Other nearby and/or regionally significant recreation use areas and facilities include rivers and trails designated under the Wild and Scenic River Act (Priest River) or National Trail System (Pacific Northwest National Recreation Trail, Kettle Crest National Recreation Trail, Lewis and Clark National Historic Trail, and Grassy Top and Lakeshore National Recreation Trails in the Sullivan Lake area).

Several estimates of regional recreational use are available and help define recreational use level characteristics of the region, including the Project vicinity. These regional use level estimates were included in the PAD and include the following:

- Colville National Forest National Visitor Use Monitoring Results (USFS 2004)
- Pend Oreille Valley Tourism and Marketing and Development Assessments (Dean Runyun Associates 2005)
- Final Environmental Impact Statement for the Box Canyon Hydroelectric Project (FERC 2004)
- Final Environmental Impact Statement for the Sullivan Creek Hydroelectric Project (FERC 1998)
- An Assessment of Outdoor Recreation in Washington State (IAC 2002 and 2003)
- Outdoor Recreation in American Life: A National Assessment of Demand and Supply Trends (Cordell et al. 1999)

Overall, these estimates indicate that most use in the Project vicinity occurs in the summer season (Memorial Day to Labor Day), most visitors tend to be fairly local (i.e., from counties in northeastern Washington), and nearly all regional recreation facilities and use areas are currently being utilized below their design capacity, though many sites experience near-capacity utilization (occasionally exceeding design capacity) during a few summer weekends and holidays. In general, future participation rates in most outdoor recreation activities are anticipated to increase at the state level; however, both fishing and hunting, activities occurring in the Project vicinity,

are expected to decline over the next 20 years. The anticipated decrease in fishing and hunting participation at the state level may be less pronounced in the Project vicinity due to their current popularity in the region.

Need for Additional Information

The Project area is one of several water-based recreation resources in the region. Visitors from northeastern Washington, as well as other states and countries, likely come to the Project area for its existing recreation opportunities and scenic qualities, among other factors. The results of the Regional Recreation Analysis will build off the preliminary regional information presented in the PAD and will help provide the data and analysis necessary to better understand the role of the Project in the context of the surrounding regional area and its recreational opportunities.

The Regional Recreation Analysis will further investigate the International Selkirk Loop and its component SR 31 Scenic Byway and the loop's regional significance and relationship to the Project. This highway loop was recently designated a National Scenic Byway in the U.S. Other scenic byways that have received national designation have seen an increase in visitation. This component of regional recreation and tourism will be further explored.

This analysis is intended to help focus decision-making about what kinds of recreation facilities and services may be needed in the Project area in the future (30 to 50 years). If certain facilities or opportunities are already provided in the vicinity or region, perhaps they do not need to be provided and duplicated in the Project area. Alternatively, if the Project area provides unique opportunities that are not available elsewhere in the vicinity or region, then perhaps they should become the focus of new recreation development in the future.

These types of results will feed into the subsequent recreation needs analysis and synthesis that will compile the results from this and other RRS study elements. Based on findings of the recreation needs analysis and synthesis, SCL will prepare a proposed RMP for the Project that will define actions to be taken by SCL to help meet existing and future Project-related recreation needs over the term of the new license (30 to 50 years) (Figure 6.0-1).

Detailed Description of Study Element

Study Area

As previously noted, the Project region in the PAD was defined as the Pend Oreille River Valley north of Newport and west of the Washington-Idaho border to the Canadian border. A component of the methodology of the Regional Recreation Analysis study element is to define an appropriate regional boundary and local and vicinity zones within that region (see Proposed Methodology, below). For purposes of this study element, the revised regional boundary may be more extensive than the regional boundary described in the PAD. The revised regional boundary should represent the likely extent of substitute recreation opportunities (considering travel times, setting, facility conditions, and quality of experience, among other factors) and may include not only northeastern Washington, but also the northern Idaho panhandle and southern British Columbia where the scenic byway corridor passes through these areas.

This assessment is not intended to be an exhaustive analysis of all recreation alternatives to the region. Rather, it is intended to focus on surrounding regional recreation resources that may affect the Project and that may provide alternatives for Project area visitors.

Proposed Methodology

The proposed Regional Recreation Analysis methodology includes three primary tasks:

1. Determine the regional study area boundary.
2. Collect and analyze regional data.
3. Develop Regional Recreation Analysis results.

Each of these proposed tasks is described in detail below.

Determine the Regional Study Area Boundary

One of the first tasks of the Regional Recreation Analysis will be to determine an appropriate regional study area boundary, while considering Project nexus and context. The regional study area boundary would encompass major recreation destinations that offer similar types of reservoir water-based and shoreline-related recreation opportunities within a reasonable distance to the Project area. Three regional study area distances or zones from the Project area are tentatively proposed, including: (1) a 5-mile radius (local residents and visitors at or near the Project), (2) a 25-mile radius (residents and visitors in the Project vicinity), and (3) a 50+-mile radius (regional visitors; the outer radius distance will need to be further examined during this analysis). These zones may be modified based on further study. Regional recreation use areas and facilities that offer similar types of reservoir water-based and shoreline-related recreation opportunities within each of these three distance zones will be identified.

Differences in visitor perception, use, activity, and needs may exist between local and vicinity residents and Project visitors from outside of the Project vicinity. These potential differences will be explored. Recreation travel characteristics (trips per year, travel distance, etc.) and recreation preferences of visitors and local residents (recreation facilities, activity participation, opportunities, etc.) will be surveyed in the Project area (as a component of the Recreation Surveys study element to the RRS). Differences in survey results between residents and non-residents will be noted, if any.

Existing and new/ongoing regional visitor survey information will also be reviewed to help define the regional study area boundary and regional study needs related to the Project, including, among others:

- Colville National Forest National Visitor Use Monitoring (NVUM) Results (USFS 2004)
- Additional USFS NVUM surveys planned in 2007, as available
- Pend Oreille Valley Tourism and Marketing and Development Assessments (Dean Runyun Associates 2005)
- An Assessment of Outdoor Recreation in Washington State (IAC 2002 and 2003)

- Ongoing IAC statewide recreation survey data (available by CTED tourism regions) that should be available by November 2007

Collect and Analyze Regional Data

Within local and vicinity zones and a broader regional study area, information will be obtained on relevant recreation facilities, activities, and opportunities that are available. Regional activities/sites that will likely be assessed include I&E sites, sightseeing, wildlife observation and photography, power and non-power boating, personal watercraft (PWC) use, boat and bank fishing, hunting, RV and tent camping, picnicking, hiking/walking, and swimming, among others.

To obtain regional recreation supply and demand information for this analysis, the following entities or resources, among others, may be contacted and/or existing reports will be reviewed:

- Kalispel Tribe
- USFS
- BLM
- National Park Service
- U.S. Fish and Wildlife Service
- U.S. Department of Transportation Federal Highway Administration
- Interagency Committee for Outdoor Recreation (State of Washington)
- Washington State Parks and Recreation Commission
- Washington Department of Fish and Wildlife
- Washington Department of Transportation
- Washington State Tourism
- Washington Outfitter and Guides Association
- Spokane Convention and Visitors Bureau
- International Selkirk Loop
- Pend Oreille County PUD
- Idaho Department of Parks and Recreation
- Idaho Department of Commerce, Tourism Division
- Idaho Outfitters and Guides Association
- Pend Oreille County, WA
- Stevens County, WA
- Spokane County, WA
- Boundary County, ID

- Bonner County, ID
- Kootenai County, ID
- British Columbia Parks, Ministry of Environment
- BC Hydro, Seven Mile Dam Project

Existing recreation supply and demand information will be obtained from these sources, as available, focusing on water-based recreation and shoreline recreation activities with possible linkages to the Project. Each of these sources will be contacted and asked to provide information regarding the extent of current recreation facilities and use areas, the level of utilization of these facilities and use areas, and recreational opportunities that can be pursued in their respective area. Anecdotal information also will be obtained from staff at these entities regarding the perceived adequacy of facilities to meet potential increases in visitation over time. This information will assist in determining the regional supply and demand for recreation facilities and current and anticipated use in the future that may affect capacity of facilities and use areas.

A separate objective of this assessment is to characterize the demand for various recreational activities and how this demand may change in the future. Potential changes in use levels in the Project area will be discussed, including the SR 31 Scenic Byway recently being designated a National Scenic Byway (use may increase) and the increased cost of fuel and its affect on recreational travel (use may decline). Regional demand information will be obtained from the entities and sources listed above to determine anticipated changes in demand for various outdoor recreation activities. This information will be combined with updated national and regional demand forecasts from other recent publications and sources.

Data on projected changes in regional population will also be collected and analyzed in this task as a way to gauge the anticipated impact of population changes on recreation activity participation and demand at the Project. Anticipated changes in county and town populations and demographics over a 30- to 50-year period will be identified from existing information (some information is currently provided in the PAD).

Develop Regional Recreation Analysis Results

Regional recreation opportunities will be described for each of the primary recreation activities in the Project area. The relative significance of the Project's recreational opportunities will be compared with other regional opportunities for the same activity type within regional boundary zones (tentatively 5-mile, 25-mile, and 50+-mile radii).

Regional demand and supply for the Project's most popular primary recreation activities will be discussed. A comparison of Project and regional recreation supply and demand factors will be used to characterize overall recreation needs for the region that relate to the Project area. Project-specific considerations will be identified and assessed later during the recreation needs analysis and synthesis and development of a proposed RMP for the Project.

Dispersed Recreation Use, Access, and Condition Analysis

Study Element Goals and Objectives

The goal of the RRS is to provide information necessary to analyze current and future recreational use, opportunities, and needs at the Project. In addition to developed recreation facilities, dispersed recreation sites and use areas and public access/trails to and along the reservoir shoreline and water surface (within the range of the normal operating pool) are important recreational components to be considered in the Project area.

For this study element, trails (land and water) are non-motorized and are defined in the Washington State Trails Plan (IAC 1991). Dispersed recreation sites and use areas include undeveloped day use and overnight recreation sites/use areas that are user-defined and may be accessible by foot, watercraft, or vehicle.

Specific objectives of the Dispersed Recreation Use, Access, and Condition Analysis study element of the RRS include the following:

- Identify and document/map existing and potential dispersed recreation use areas and sites in the Project area. Physical site attributes of existing sites will be defined (e.g., location, slope, vegetation, access). The presence of user-created facilities will be inventoried (e.g., campfire rings, benches and tables, tent pads, trails, excavated sandy beaches, boat mooring poles). Likely users will be identified based on anecdotal information (e.g., access to each site, impacts observed, and observations).
- Identify and document/map existing road, foot trail, and/or watercraft access routes used by the public and SCL to access the Project shoreline, Project facilities, or along the reservoir water surface. In addition, potential road and/or trail routes that may potentially be developed in the future for enhanced public access will be noted. Information to be obtained along existing routes includes the qualitative condition of site features and/or routes, presence of fencing, gates or other barriers (natural or man-made), presence of posted signs that may direct or prohibit public access, impacts observed along these routes such as erosion, and an assessment of the likely users of these land and water routes. Additional detailed information on Project-related roads and their condition will be collected and analyzed in the Land and Roads Study (see section 6.2).
- Identify and document/map trail and dispersed site-related ecological impacts (e.g., vegetation damage or removal, wetland impacts, exposed soil and compaction, accumulated litter and debris, sanitation issues). Identify the likely users of these areas or sites based on observed impact and access, such as OHV use. Evaluate and quantify the location, timing, and extent of user-related impacts to sensitive Project area lands, waters, and resources.
- Identify opportunities and constraints to maintaining or enhancing dispersed recreation use areas, sites, and public road/trail access within the Project area.
- Identify the potential effects of projected future private shoreline development directly adjacent to but outside of the Project boundary on dispersed recreation use

areas, sites, and public road and trail access in the Project area. Identify the potential effects of current and potential future Project operations on dispersed recreation use areas, sites, and public road/trail access.

Need for Study Element

Summary of Existing Information

During the preparation of the PAD, SCL staff visually identified multiple dispersed recreation sites (undeveloped use areas with user-created site features and/or impacts such as fire rings, benches, bare ground, vegetation damage, etc.) along the Boundary Reservoir shoreline. Other sites were identified by SCL staff knowledgeable of visitor use areas and dispersed sites (undeveloped areas where visitors have been previously observed participating in recreational activities). These sites are primarily accessed by watercraft and are mainly used for day use, as well as some short-term tent camping. One particular area along the reservoir shoreline was being accessed by OHV users, and ecological impacts to Project lands were observed.

Vehicular access to the Project area's primary developed recreation facilities is documented in the PAD. The three developed recreation facilities operated by SCL (Vista House, Tailrace Recreation Area, and Forebay Recreation Area) are easily accessed by vehicle via SR 31 or County Road 2975. The other developed recreation facilities on Boundary Reservoir (BLM Recreation Site, Metaline Waterfront Park/Boat Ramp, and Campbell Park/Boat Ramp) are also accessed via these roads or by boat. Little is known or is documented about how the public accesses the Project shoreline for dispersed recreation purposes.

Need for Additional Information

Steep canyon walls along much of the reservoir (especially north of the SR 31 Bridge) limit dispersed recreation use in much of the Project area. Some shoreline areas, however, provide opportunities for dispersed recreation and access. A detailed inventory of existing and potential dispersed sites and use areas along the reservoir shoreline needs to be completed to adequately describe these opportunities and constraints and any potential impacts that may result from dispersed shoreline recreation use. This information is also needed to accurately describe existing and potential public road and trail access along and to the reservoir shoreline.

While vehicular access has generally been documented in the PAD, informal access (e.g., non-paved roads, user-defined trails, shoreline watercraft access) and potential future access opportunities have not been fully investigated.

Detailed Description of Study Element

Study Area

The study area for the Dispersed Recreation Use, Access, and Condition Analysis study element of the RRS includes the lands and waters within and adjacent to the Project boundary. This assessment will include SCL-owned lands in and adjacent to the Project boundary, the water surface within the Project, and adjacent public and private lands. Dispersed recreation sites and use areas that may be affected by normal daily/weekly pool level fluctuations will also be

evaluated within the top 10 feet (elevations 1,980 feet to 1,990 feet [1,984–1,994 feet NAVD 88]) of the reservoir pool. Above Boundary Dam, lands between the reservoir shoreline and major adjoining parallel roads and/or highways, such as SR 31, will be included in the study area relative to assessing public access to and along the reservoir. Below Boundary Dam, the study area will extend to SR 31 to the east and the SCL land ownership boundary to the west. The USFS requested¹ a 0.25-mile buffer in this downstream area; however, SCL's proposal is appropriate given restricted public access in this area due to border and Project security restrictions. In 2006, SCL collected additional information on public road and trail access in the Project area that will be used to further define this study area including study area buffer width along known public access roads and trails.

Proposed Methodology

Two primary tasks are proposed for the Dispersed Recreation Use, Access, and Condition Analysis study element of the RRS: (1) Dispersed Recreation Inventory and Condition Analysis and (2) Public Access Analysis. Each of these tasks is described below.

Dispersed Recreation Inventory and Condition Analysis

Prior to conducting a field inventory of existing dispersed recreation use areas and dispersed sites, a site condition analysis form will be developed. The site condition analysis form will be based on forms commonly used to evaluate potential biophysical impacts resulting from public use and recreation (Cole 1989, Hammitt and Cole 1998). The form will include qualitative and quantitative assessments for potential public use and recreation impacts including, but not limited to, the following:

- Vegetation (percent cover, density of site vegetation compared to surrounding area, exposed tree roots, broken tree limbs, etc.)
- Soil (percent bare ground, erosion, etc.)
- Trash (presence, amount, etc.)
- Sanitation (toilet paper, human waste, etc.)²
- Informal/social trails (presence, number, average width, average depth, etc.)
- Proximity to wetlands
- Location relative to pool level and ability to access and use
- Proximity to riparian habitat or other sensitive environmental features, such as nests)
- Other man-made disturbances and/or site features (fire rings, benches, hunting blinds, etc.)

¹ Request was made in USFS's PAD/Scoping comment letter filed with FERC on August 31, 2006 (USFS 2006b).

² The USFS's official study request included the following task: "Determine options and procedures for addressing safety and sanitation concerns within and adjacent to the Project reservoir as a result of existing and future recreational demand" (USFS 2006b, page 1). However, SCL believes that data on existing use, future demand, and carrying capacity need to be obtained before a comprehensive analysis of safety and sanitation can be completed, and therefore has not specifically included this requested task.

Shoreline erosion impacts not associated with a specific dispersed use area will be investigated separately as a component of the Erosion Study (see section 2.1). Additionally, various types of potential impacts on wildlife, vegetation, fish, water quality, and cultural resources, including those from public use and recreation, will also be assessed as appropriate during several other studies associated with each of these resource areas. To the extent possible, all resource impact-related studies will be coordinated.

Following completion of a site condition analysis form, a field inventory of existing dispersed use areas and sites will be completed. Potential dispersed use areas and sites will be identified by boat where possible, as most dispersed use areas and sites are likely found along the reservoir shoreline. Existing dispersed use areas and sites will be identified based on setting characteristics (e.g., slope, vegetation, access), the presence of user-created facilities (e.g., campfire rings, benches), and/or the identification of use-related impacts (e.g., vegetation damage, exposed soil, accumulated litter, sanitation issues). At each identified dispersed use area or site, the following field tasks will be completed:

- Photograph existing features and significant impact areas.
- Establish use area/site location information using GPS for GIS mapping.
- Complete a site condition analysis form.

After the field inventory is complete, all identified dispersed use areas and sites, including access to these sites, will be mapped.

Public Access Analysis

Existing and potential future public access routes (land and water) in the Project area will be identified and assessed by:

- Reviewing existing resource and land ownership maps, topographic maps, and aerial photography.
- Consulting with SCL, USFS and BLM staff, and others who know the Project area well and are familiar with its history.
- Boating to dispersed sites and use areas/sites along the shoreline, driving existing roads where vehicular access is possible, and walking formal and informal user-defined trails on lands open to the public.
- Defining likely existing water trail routes along the reservoir water surface, current shoreline watercraft put-ins/take-outs and portage sites, constraints to watercraft access along the reservoir water surface such as the falls area, and overnight stop-over sites.
- Documenting and mapping existing and potential public access routes to and within the Project area in GIS, including roads and trails (land and water).
- Reviewing potential recreation use areas and potential trail opportunities identified in the 1965 Boundary Reservoir Area Recreation Plan (USFS 1965).
- Reviewing existing USFS road inventory data for Level 1-5 roads.

- Reviewing USFS Road Management Objectives (RMO) being developed as part of the CNFP update.
- Analyzing and reporting the results of this analysis task.

These tasks should be adequate to meet the needs of the trail-related study request submitted by the USFS (USFS 2006b).³ It is the intent of this initial study to define under-served areas and general areas of opportunity as they relate to public access roads, land trails, water trails, and sites in the study area that may potentially be enhanced or developed in the future by SCL or others. Prior to obtaining user demand data, SCL believes it is premature to consider site-specific trail options. SCL believes it is appropriate to use a phased approach to considering recreation opportunities. Prior to acquiring user demand data through the visitor questionnaires and focus groups, it is premature to assume that user preferences can be known. The Dispersed Recreation Use, Access, and Condition Analysis component of the RRS is intended to identify both under-served areas of the Project area and areas where viable options exist for new or enhanced public access or land or water trails. Once these analyses are completed, the results will be merged in the subsequent recreation needs analysis and synthesis. During the recreation needs analysis and synthesis and development of the RMP, these candidate roads, trails and sites will be further analyzed and specific ones may be selected in under-served areas, if appropriate.

Particular attention will be focused on shoreline access (by land and water) opportunities and constraints in the Project area. GIS mapping will be used to identify and overlay opportunity and constraint factors such as private and public land ownership, easements, recreational facilities, formal and informal parking areas, roads, trails, steep slopes, rock outcrops, dense forest vegetation, and sensitive resources (to the extent known at this time).

Public road and trail access in the Project area (land and water) will be evaluated using three criteria ratings (high, medium and low) for existing public shoreline and reservoir access, as well as potential future public shoreline and reservoir access. Public access (land and water) criteria for each rating will be defined; these include criteria such as ease of public access (roads and land and water trails) both now and potentially in the future, significant constraints encountered, trail and road distances and conditions, and existing and potential future destinations. A descriptive analysis with tables and maps will summarize Project areas (1) where the public has reasonable and safe public road and trail access now, (2) where public road and trail access to the shoreline and along the reservoir is highly constrained now and will likely remain so into the future, and (3) where public road and trail access could potentially be improved in the future if identified options were further investigated and found to be viable for implementation. This assessment will consider, among other factors, shoreline areas accessible by vehicle and pedestrian travel, shoreline and reservoir areas suitable for watercraft use and access, and planned private development in or adjacent to the Project boundary.

³ The USFS's official study request included the following task: "Determine the potential for developing a trail system that would include: • A land based trail connecting Metaline Falls with the Vista House and with other scenic overlooks en route; • A trail to an overlook of PeeWee Falls with trailhead and appropriate facilities from the east side of the reservoir; • A portage point north of the Metaline Falls rapids allowing for river trail opportunities by canoes wishing to travel with the current and then take out at the Boundary Dam Recreation Area." (USFS 2006b, page 5)

During this initial assessment, viable options for potential new or enhanced public access roads and/or land and water trails in under-served areas will be identified for further consideration in the recreation needs analysis and synthesis and RMP. At that, most resource studies will have been completed and multi-resource opportunities and constraints can be fully assessed, along with existing and future recreation needs for the Project area.

Future Recreation Use Analysis

Study Element Goals and Objectives

The goal of the RRS is to provide information necessary to analyze current and future recreational use, opportunities, and needs related to the Project. It is important to estimate future use levels in the Project area to appropriately plan for anticipated recreation needs over the term of the new FERC license.

Specific objectives of the Future Recreation Use Analysis study element of the RRS include the following:

- Analyze recreation activity demand and user data by activity type collected during the Recreation Surveys and the Regional Recreation Analysis.
- Estimate recreation use levels and demand for different activity types within the study area through the anticipated term of the new license (30 to 50 years).
- Identify any specific recreation activities in the Project area that may currently have lower demand, but are anticipated to experience increased (or decreased) rates of participation in the future.

Need for Study Element

Summary of Existing Information

To date, no Project-specific estimates of future use have been completed. However, several regional sources of recreation information provide estimates of future recreation use for specific activities. These regional sources of information include, among others, Estimates of Future Participation in Outdoor Recreation in Washington State (IAC 2003) and Outdoor Recreation in American Life: A National Assessment of Demand and Supply Trends (Cordell et al. 1999).

The IAC's Estimates of Future Participation in Outdoor Recreation in Washington State (IAC 2003) provides estimated future participation rates for popular outdoor recreation activities in the state, including some that are known to occur in the Project vicinity and region. Ten- and 20-year estimates, as a percent change in the number of people participating in each activity, are provided in Table 6.1-4 for select activities. In general, statewide future participation rates in most outdoor recreation activities are anticipated to increase; however, both fishing and hunting, popular activities occurring in the Project vicinity, are expected to decline (statewide and in the Western U.S.) over the next 20 years.

Table 6.1-4. Anticipated changes in outdoor recreation activity participation in Washington. (Source: IAC 2003)

Activity	Estimated 10-Year Change	Estimated 20-Year Change
Walking	+23 percent	+34 percent
Hiking	+10 percent	+20 percent
Nature Activities	+23 percent	+37 percent
Sightseeing	+10 percent	+20 percent
Bicycle Riding	+19 percent	+29 percent
Picnicking	+20 percent	+31 percent
Motor Boating	+10 percent	No estimate
Non-pool Swimming	+19 percent	+29 percent
Canoeing/Kayaking	+21 percent	+30 percent
Fishing	-5 percent	-10 percent
Camping (developed)	+10 percent	+20 percent
Hunting	-15 percent	-21 percent

Regional and national outdoor recreation participation and projections are provided in *Outdoor Recreation in American Life* (Cordell et al. 1999) for many of the most popular outdoor recreation activities in the U.S. This document provides one of the only national assessments of current participation, trends, and future supply and demand for recreation activities and facilities in the U.S. and is commonly used in recreation research. Activity participation rates and projections presented in this document are based on results from the 1994–1995 National Survey on Recreation and the Environment (NSRE).

Cordell et al. (1999) provides a comprehensive analysis of future trends in outdoor recreation participation for the U.S., as well as for specific regions. Washington, including the Project vicinity, is considered to be within the Pacific Region for purposes of the Cordell et al. (1999) assessment. Other states included in the Pacific Region are California, Oregon, Alaska, and Hawaii. Because the Project area is adjacent to the state line and the Rocky Mountain Region, results from both the Pacific and Rocky Mountain regions will be reviewed for relevance to the Project.

Using statistical models, projected changes in demographics (including age, race and ethnicity, gender, income, education, and previous experience) were used to assess likely future trends of various outdoor recreation activities through 2050. Evaluating future trends in recreation activity participation is helpful in assessing the type of recreation facilities and opportunities that may be needed in the future. Table 6.1-5 provides a summary of participation projections for popular activities in the Project vicinity and region. These activity participation projections indicate that participation in outdoor activities is expected to increase by 2050 and beyond. Some activities are expected to experience modest growth (e.g., fishing, primitive camping, backpacking), while others may experience more robust growth (e.g., rafting/floating, motor boating, canoeing,

sightseeing, hiking). Only hunting is expected to decrease in terms of numbers of participants in the Pacific Region. If the number of participants in these various activities increases over time, then increased use levels could potentially occur.

Table 6.1-5. Recreation activity participation projections through 2050¹. (Source: Cordell et al. 1999)

Activity	1995 ²	2000 ³	2010 ³	2020 ³	2030 ³	2040 ³	2050 ³
Walking	21.10	8%	23%	34%	49%	62%	73%
Non-Consumptive Wildlife Activities	16.70	8%	23%	37%	52%	65%	77%
Family Gatherings	19.30	7%	20%	30%	42%	54%	65%
Sightseeing	18.50	9%	26%	42%	58%	74%	87%
Visiting a Beach	20.70	8%	21%	33%	46%	60%	72%
Picnicking	15.80	7%	20%	31%	44%	54%	63%
Visiting Historic Places	13.80	8%	22%	33%	46%	58%	68%
Hiking	10.90	8%	23%	34%	53%	69%	85%
Non-pool Swimming	11.60	6%	19%	29%	43%	57%	72%
Fishing	7.50	5%	12%	20%	23%	30%	38%
Biking	9.80	6%	19%	29%	41%	53%	65%
Developed Camping	8.80	6%	19%	32%	45%	59%	73%
Primitive Camping	5.60	5%	13%	23%	27%	35%	44%
Motor Boating	6.30	7%	22%	32%	52%	69%	88%
Hunting	1.70	-6%	-15%	-21%	-27%	-33%	-36%
Backpacking	3.80	5%	12%	23%	24%	34%	46%
Rafting/Floating	2.30	5%	20%	30%	52%	73%	97%
Canoeing	1.20	6%	21%	30%	51%	69%	89%

Notes:

- 1 Projections are for the Pacific Region, which includes Washington.
- 2 1995 baseline totals for numbers of participants in millions.
- 3 Projections are provided in 10-year increments from 2000–2050. Percent change provided by decade based on 1995 baseline data.

Need for Additional Information

As stated previously, no Project-specific estimates of future use have been completed to date. An estimate of anticipated future use needs to be completed to adequately plan for probable future recreation needs in the Project area over the anticipated term of the new FERC license. This information is also needed to help identify recreation activities in the Project area and region that may currently have lower demand and/or actual use but are anticipated to experience increased (or decreased) rates of participation in the future.

Detailed Description of Study Element

Study Area

The study area for the Future Recreation Use Analysis study element of the RRS includes the lands and waters within and adjacent to the Project boundary, including:

- SCL-managed developed recreation sites (Vista House, Tailrace Recreation Area, and Forebay Recreation Area).
- Non-SCL-managed recreation sites within or adjacent to the Project boundary (Metaline Waterfront Park [boat ramp and shoreline area], Pend Oreille County PUD Campbell Park [boat ramp area], USFS Crescent Lake Recreation Area, BLM Boundary Recreation Site, and SR 31 Sweet Creek Falls Rest Stop).
- Major dispersed sites and trails within the Project area.
- On-water reservoir power boating and non-power boating use (above Boundary Dam).

This analysis will also include recreation activity trends in the broader region where visitors to the Project area may originate. The broader region for visitors to the Project area will be defined in the Recreation Surveys and Regional Recreation Analysis elements of the RRS.

Proposed Methodology

Estimating future recreation use is important to help planners determine how and where to invest in recreation programs and infrastructure. Future recreation use is influenced by the same supply and demand factors as current use — supply, location and attractiveness of facilities, age, income, demographic trends, population size, and the condition of the regional economy. However, future use is also influenced by variables for which no or very little hard data exist. Future use estimates must consider less clearly defined variables such as emerging new technologies and recreation equipment, and changes in visitors' tastes and preferences for recreation. They must also consider larger changes that occur at a societal level, both nationally and regionally, such as shifts in the amount of free time and disposable income, shifts in family structure, and increased ethnic diversity. As a result, most recreation forecasting efforts involve a combination of quantitative and qualitative approaches that examine multiple future scenarios and attempt to predict different use levels and needs.

The Future Recreation Use Analysis will build off data and summary results from the Recreation Surveys study element of the RRS. Specifically, the following components of the Recreation Surveys are needed for this analysis:

- Estimate of existing use in the Project area
- County of origin of visitors to the Project area (based on Zip codes [US] and postal codes [Canada])
- Existing activity participation rates in the Project area
- Regional survey and public input data

Using this information, future recreation use levels in the study area will be estimated by decade for the anticipated term of the new FERC License (up to 50 years). Three primary tasks will be conducted for the Future Recreation Use Analysis study element of the RRS:

- Assess regional population and use trends that may affect future Project area recreation use levels.
- Estimate future recreation use in the study area.
- Compile and summarize results into a report.

Each of these tasks is described below.

Assess Regional Population and Use Trends

Prior to estimating future recreation use in the Project area, regional sources of population and recreation use level projections will be assessed. Using Zip codes (U.S.) and postal codes (Canada) collected during the Recreation Surveys, county population projections will be researched and compiled for the primary counties of origin of visitors to the Project area. Existing activity participation or demand levels, as well as projections, will also be researched. Potential sources of information for outdoor activity levels and projections include the following, among others:

- Washington Statewide Comprehensive Outdoor Recreation Plan (IAC 2002)
- Estimates of Future Participation in Outdoor Recreation in Washington State (IAC 2003)
- Idaho Statewide Comprehensive Outdoor Recreation and Tourism Plan (IDPR 2003)
- Outdoor Recreation in American Life: A National Assessment of Demand and Supply Trends (Cordell et al. 1999) – Pacific and Rocky Mountain Regions
- National Survey on Recreation and the Environment (NSRE) (USFS 2006a)
- Outdoor Recreation Participation Study: Trend Analysis for the United States, 8th Ed. (Outdoor Industry Foundation 2006)
- Other data sources identified, as appropriate, per the results of the Regional Recreation Analysis and Recreation Surveys

Fishing and hunting license sales, available from the Washington Department of Fish and Wildlife, will also be researched for Pend Oreille County and other counties where most visitors to the Project area originate. In addition, USFS survey data on fishing and hunting within the CNF will be evaluated.

These reviews will focus on identifying the most recent population estimates (likely the 2000 Census), anticipated population changes, annual outdoor activity participation rates, and anticipated changes in activity participation rates. All population and activity research will be compiled and summarized, and used to estimate future recreation use levels in the study area.

Estimate Future Recreation Use in the Project Area

Based on the information collected in the previous task, an estimate of potential future recreation use will be developed for the study area. This estimate will likely include a range of estimated future use based on assumptions that will be defined during the study implementation planning phase. Selection of the appropriate methodology will include consideration of three sources of data and other input. Use of specific data in making these projections will depend upon the quality and applicability of the available data for the study area. Future recreation use projections, presented as a range of use levels based on different assumptions about future conditions, will be based on the following, as appropriate:

- *Activity participation rate-based projections* — this focuses on applying anticipated changes in regional activity participation rates to existing Project area recreation participation rates. These projections may vary depending upon assumptions about future activity use levels and trends.
- *Population change-based projections* — this focuses on applying anticipated county-level population changes to current use levels based on the existing counties of origin of visitors to the Project area. Development potential in the Pend Oreille River corridor may also affect use levels in the corridor and will be considered as a factor.
- *Professional judgment* — this focuses on consideration of past, current, and future trend projections unique to the Project area based on professional judgment, the unique physical characteristics and location of the study area, anecdotal information from various sources, input from the local community and from focus groups, input from site operators and land and resource managers, among other factors.

Considerations and assumptions regarding the accuracy, source, age, and quality of data to be used in making projections will be documented. Future recreation use levels in the Project area will be estimated as a range of use in 10-year increments for the anticipated term of the new FERC license (30 to 50 years).

Compile and Summarize Future Recreation Use Analysis Results

The results of the Future Recreation Use Analysis will be summarized in text, table, and graphic format and conclusions will be drawn, as appropriate. The report will provide an overall estimate of regional population and activity participation rate projections, as well as estimated future recreation use levels for the study area. Additionally, particular attention will be given to extremely low and/or high future population and activity rate changes in the region and how these expected changes may influence recreation use in the Project area. The individual RRS study element results, including the Future Recreation Use Analysis, will be comprehensively assessed during the subsequent recreation needs analysis and synthesis and development of a proposed RMP for the Project.

Recreation Carrying Capacity Analysis

Study Element Goals and Objectives

The concept of recreation carrying capacity was originally developed out of biological models that attempted to determine the capability of a given environment (e.g., range, pasture, etc.) to sustain a specific number of animals over time. As such, undue attention has been placed on developing a specific number of visitors that represents the ideal carrying capacity of a recreation facility. In actuality, many management issues regarding recreation carrying capacity decision-making are not necessarily density dependent; rather, recreation carrying capacity issues are also related to the ecological, social, and managerial aspects of recreational opportunities (McCool 1996).

Recreation carrying capacity has been defined in a number of ways, but a useful definition is “the level of use beyond which impacts exceed standards” (Shelby and Heberlein 1986). At some point, recreation demand cannot be met without negatively affecting sensitive resources and/or the recreation experience that people expect. The goal for decision-makers is to manage recreation use levels and impacts so that they do not exceed overall capacity standards.

Recreation carrying capacity is often applied as either a research tool (to define capacity based on existing conditions and constraints and potential future use) or as a monitoring/management tool (to identify indicators [key issues] and standards/guidelines of quality and experience to help manage use within established capacity parameters). In this study element, the primary purpose is as a research tool that will investigate existing and potential future use and the carrying capacity of recreation resources in the study area, including developed recreation sites, dispersed use areas, and the reservoir surface. While this analysis will utilize capacity standards/guidelines, specific detailed indicators and standards/guidelines of the type used for monitoring/management will not be fully developed at this time; however, they may be developed later as part of a monitoring program, if needed.

Specific objectives of the Recreation Carrying Capacity Analysis study element of the RRS include the following:

- Use the information developed in the other RRS elements to help develop the results of this analysis.
- Establish whether existing recreation use levels are below, approaching, at, or exceeding the Project area’s ability to adequately accommodate recreational use without adversely impacting the ecological, social, or managerial capacity of the Project area, including the reservoir surface, developed recreation sites, and dispersed use areas (to a limited extent).
- Use the results of the recreation carrying capacity analysis to help define potential capacity indicators and standards/guidelines and determine whether management actions may be needed to maintain use levels at or below established standards/guidelines.

Need for Study Element

Summary of Existing Information

To date, a recreation carrying capacity analysis has not been completed for the Project area. The limited existing information, primarily regarding existing use levels, that could potentially be used in a recreation carrying capacity analysis is described above in the Dispersed Recreation Use, Access, and Condition Analysis, and the Recreation Surveys study elements (in the “Summary of Existing Information” sections).

FERC Form 80 requires licensees to develop Project recreation facility capacity estimates. Facility capacity estimates are required for aggregated recreation sites based on intended use instead of for individual sites. Table 6.1-6 displays Form 80 facility capacity estimates that SCL has submitted to FERC since 1991.

Table 6.1-6. Estimated facility capacity for recreation facilities in the Project area (Source: SCL 1991, 1996b, and 2002).

Recreation Resource Type	Existing Facility Capacity (Percent)		
	1991	1996	2002
Access Areas	2	4	1
Boat Ramps	4	8	30
Boat Launching Lanes	4	8	30
Tailwater Fishing Facilities	1	1	NA
Parks	NA	NA	51
Picnic Areas	2	4	30
Wildlife Areas	3	7	7
Visitor Centers	8	18	0
Interpretive Displays	10	22	26
Overlooks	5	10	10
Camping Areas	5	12	44
Tent/Trailer/RV Sites	5	12	44

The capacity estimates provided in Table 6.1-6 are specific to facility capacity. A well designed and operated developed recreation facility should be able to be used at high capacity levels (80 to 100 percent). However, as stated above, recreation capacity is a complex issue involving multiple variables; currently, FERC Form 80 reporting requirements do not address all types of capacity.

Need for Additional Information

A thorough analysis of carrying capacity variables is required for FERC relicensing purposes. This information will also be used in the recreation needs analysis and synthesis and development of a proposed RMP for the Project.

Detailed Description of Study Element

Study Area

The study area for the Recreation Carrying Capacity Analysis study element of the RRS includes the lands and waters within and adjacent to the Project boundary, including:

- SCL developed recreation sites — Vista House, Tailrace Recreation Area, and Forebay Recreation Area.
- Non-SCL recreation sites within or adjacent to the Project — Metaline Waterfront Park, BLM Boundary Recreation Area, Pend Oreille County PUD Campbell Park (boat ramp only), USFS Crescent Lake Recreation Area, and SR 31 Sweet Creek Falls Rest Area.
- Major trails and dispersed recreation sites and use areas in the Project area (as defined in the Dispersed Recreation Use, Access, and Condition Analysis study element).
- The reservoir or river surface area (above Boundary Dam).

Proposed Methodology

Maintaining use levels within a recreation site's capacity is important in terms of protecting natural, cultural, and recreation resources. Assessing a recreation site's carrying capacity is also important in "helping to assure public safety, providing predictability to private sector permittees and local communities, allocating opportunities among public and private sector providers, contributing to planning at a local or regional ecosystem scale, and helping to assess the consequences of management alternatives" (Haas 2002).

Recreation carrying capacity studies are often conducted with two purposes in mind: (1) as a research tool, and (2) as a monitoring/management tool. As a research tool, recreation carrying capacity studies define the biophysical, social, and managerial capacity of an area based on existing opportunities and constraints that can then be applied to the future based on anticipated use levels. As a monitoring/management tool, recreation carrying capacity studies are often used to identify specific detailed indicators (key issues) and standards/guidelines of quality and experience to be used to keep existing and anticipated future recreation use within established carrying capacity parameters.

The focus of this Recreation Carrying Capacity Analysis is on carrying capacity as a research tool for study purposes. Proposed recreation capacity indicators and standards/guidelines for the Project may be developed later as part of a monitoring program, if needed.

The Recreation Carrying Capacity Analysis will build off data and summary results from the other study elements of the RRS. Specifically, the following RRS elements are needed for this analysis:

- Dispersed Recreation Use, Access, and Condition Analysis
- Regional Recreation Analysis
- Recreation Surveys
- Future Recreation Use Analysis

Using this information, existing carrying capacity levels will be discussed for the study area. Future carrying capacity levels will generally be addressed, although the detailed, site-specific indicators and standards/guidelines needed to accurately predict potential future carrying capacity issues and/or concerns will not be developed. Four primary tasks are proposed for the Recreation Carrying Capacity Analysis study element of the RRS: (1) compile and review carrying capacity data and information from the other RRS elements, (2) determine carrying capacity levels, (3) recommend potential carrying capacity indicators and standards/guidelines, and (4) compile and summarize results into a report. Each of these tasks is described below.

It is important to recognize that the concept and practical application of establishing recreation carrying capacity is a work in progress and continues to be researched extensively (Haas 2001). Recreation carrying capacity frameworks have been researched and applied in a variety of settings and several are commonly used as recreation monitoring and/or management tools, though none are universally accepted. These frameworks include Limits of Acceptable Change (Stankey et al. 1985), Visitor Impact Management (Graefe et al. 1990), and Visitor Experience and Resource Protection (National Park Service 1997), among others. Each of these frameworks share three important elements: (1) indicator variables and standards of quality are used to specifically define the types of recreation opportunities to be provided; (2) indicator variables are monitored to determine whether standards/guidelines of quality are being met; and (3) management actions are initiated if/when standards/guidelines of quality are violated (Manning 1999).

Compile and Review Carrying Capacity Data and Information

In general, no new large-scale field research will be completed for the Recreation Carrying Capacity Analysis, though some follow-up field work may be required. Instead, this analysis will build off the data and information collected through the other RRS elements. Table 6.1-7 describes the data and information from each of the RRS elements that will be used for the Recreation Carrying Capacity Analysis. The data and information in Table 6.1-7 is presented by capacity type: biophysical, social, and managerial. Each of these capacity types is described in the next task (Determine Carrying Capacity Levels).

Table 6.1-7. RRS element sources of data and information for the Recreation Carrying Capacity Analysis.

RRS Elements	Capacity Type		
	Biophysical	Social	Management
Dispersed Recreation Use, Access, and Condition Analysis	<ul style="list-style-type: none"> Potential recreation-related impacts (dispersed shoreline areas and trails only) 		<ul style="list-style-type: none"> Access issues Potential opportunities for dispersed recreation and trails
Regional Recreation Analysis			<ul style="list-style-type: none"> Substitute recreation sites and use areas
Recreation Surveys – including Recreational Fishing Study	<ul style="list-style-type: none"> Visitor identified biophysical issues and/or concerns 	<ul style="list-style-type: none"> Visitor and area resident identified conflicts Visitor and area resident crowding levels and responses 	<ul style="list-style-type: none"> Existing recreation site use levels (facility capacity) – developed sites, major dispersed use areas, and trails Existing on-water use levels
Future Recreation Use Analysis			<ul style="list-style-type: none"> Future use levels (facility capacity) – developed sites, major dispersed use areas, and trails

Other information that will be collected as a component of this task includes a biophysical impact assessment at developed recreation sites and interviews with on-site managers to obtain their qualitative observations on recreation and public use in the study area. By nature, biophysical capacity is usually less of a concern at developed recreation sites, compared to dispersed sites and trails, because of the presence of hardened recreation facility features that tend to help limit potential biophysical impacts. Nonetheless, improper site design and/or site misuse by visitors can result in biophysical impacts at developed recreation sites including erosion, vegetation damage, and other potential recreation-related impacts (note: biophysical impacts will be assessed at dispersed sites and trails during the Dispersed Recreation Use, Access, and Condition Analysis).

Determine Carrying Capacity Levels

Based on the data collected in the other study elements, and information compiled in the previous carrying capacity task, the existing carrying capacity of the study area and its components will be defined. These study area components include individual developed recreation sites (SCL- and non-SCL-managed), the reservoir surface area by zone, dispersed use areas and major trails (reported in aggregate, though specific sites and/or trails may be discussed if significant capacity-related issues are identified), and the study area as a whole. While quantitative data collection is a vital component of capacity-based research and the decision-making process, qualitative professional judgment (e.g., prior experience, management context

and priorities, public values, tradition, history) is also important. As such, capacities will be expressed in qualitative terms for purposes of this analysis (e.g., below, approaching, at, or exceeding capacity).

There is a large body of research on crowding and resource deterioration in recreation settings, including a state-of-the-art summary regarding carrying capacity decisions (Haas 2001). In such research, at least three types of capacity are typically delineated including (Manning 1999):

- *Biophysical (Ecological) Capacity* — typically concerned with the biophysical characteristics of the natural resource base, including the ability of the resource base to absorb potential recreation-related impacts. Common biophysical capacity indicators include erosion, vegetation damage, sanitation concerns, and accumulated litter, among others. Examples of standards/guidelines for biophysical capacity include: distance in feet to wetlands, approximate percent of bare ground at erosion sites, presence of accumulated trash and debris (qualitative), and presence of sanitation problems (qualitative).
- *Social Capacity* — typically concerned with the characteristics of the visitor base, including preferences, demand, and needs. Common social capacity indicators include perceived crowding, visitor conflict, and distance preferences between groups/visitors, among others. Examples of standards/guidelines for social capacity include: rating of respondents with a perception of crowding (scale of 1–9), percent of respondents that observed user conflicts, and percent of respondents that changed their use patterns due to crowding.
- *Management Capacity* — typically concerned with recreation provider-controlled resources and policies, including legal directives, policy guidelines, goals and objectives, and funding priorities. Common management capacity indicators include expansion potential, facility capacity (e.g., parking spaces, campsites, boat ramp lanes, picnic tables), and rules and regulations (types and levels of recreation use that are allowed), among others. Examples of standards/guidelines for management capacity include: wait times at boat launches, capacity utilization at developed recreation facility elements, and number of violations of rules or regulations.

One or more indicator variables will be established for each of these capacity types. Indicator variables are the key issues that will be researched in the RRS elements, including biophysical impacts (vegetation damage, erosion, litter accumulation, etc.), social impacts (perceived crowding, responses to crowding, conflict, etc.), and management impacts (facility capacity, site expansion potential, boat ramp congestion). For each indicator variable, a quantitative and/or qualitative standard/guideline will be established for each capacity level (e.g., 80 percent occupancy = approaching facility capacity, 100 percent occupancy = at facility capacity).

The Recreation Carrying Capacity Analysis focuses on the capacity of developed recreation sites and the reservoir surface area because they tend to receive the greatest amount of visitation and thus have a higher potential for visitor-related impacts (e.g., crowding issues, excessive boat ramp wait times, visitor displacement). However, capacity will also be assessed at major dispersed use areas and trails in the study area. Identified dispersed use areas and trails will likely be reported in aggregate because existing opportunities for these types of experiences are

very limited in the Project area at this time. Specific dispersed use areas and/or trails will be discussed if site/trail-specific significant capacity-related issues are identified.

For developed sites, dispersed sites and trails, the reservoir surface area, and the study area as a whole, this analysis will provide an understanding of recreation facilities, existing use patterns, perceived crowding and responses, facility capacity, and user impacts and conflicts, among other factors. Quantitative and qualitative data will be used to describe the existing biophysical, social, and management capacities in the study area. One or more capacity indicator variables will be identified as the primary limiting factor(s) at each recreation site based on the level of concern for each individual capacity indicator. A limiting factor is defined as an indicator that constrains the level of recreation use (capacity) at a site or use area. The limiting factor often drives future decision-making regarding management priorities and monitoring programs and is often the “trigger” that determines when recreation use has reached a specific level of capacity.

After evaluating the capacity level for each biophysical, social, and management indicator variable, an overall capacity conclusion will be determined for each developed recreation site, dispersed use areas and trails, reservoir surface area, and the study area. To determine the overall capacity level, all three capacity types and their full suite of indicator variables will be considered in aggregate. No attempt will be made at this time to prioritize one capacity type or indicator variable over another; rather, all capacity types and indicators will be considered equally. Capacity types and indicator variables will likely be prioritized (through the use of a carrying capacity framework for monitoring and management) in a proposed RMP for the Project.

Recommend Potential Carrying Capacity Indicators and Standards/ Guidelines

The establishment of capacity indicators and standards/guidelines of quality that would help alert outdoor recreation managers that “actions may be necessary to sustain the area’s resources, visitor experiences, and management effectiveness,” is inherent in developing and monitoring the recreation carrying capacity of an outdoor recreation area (Haas 2001). While the focus of the Recreation Carrying Capacity Analysis is on defining existing and projected future capacity based on current use and opportunities, carrying capacity indicators and standards/guidelines will also be generally explored for potential future conditions, as appropriate.

Compile and Summarize Recreation Carrying Capacity Analysis Results

The results of the Recreation Carrying Capacity Analysis will be summarized in text, table, and graphic format and conclusions will be drawn, as appropriate. The report will provide existing carrying capacity information for the study area and applicable adjacent areas, as described in the Study Element Area. The individual RRS study element results, including the Recreation Carrying Capacity Analysis, will be comprehensively assessed later in the recreation needs analysis and synthesis and development of a proposed RMP for the Project.

6.1.5. Work Products

The following work products/reports are proposed for each RRS study element:

- Draft Summary Report
- Final Summary Report

The summary reports will be provided to relicensing participants for technical review and input per the Process and Schedule Overview provided in section 1.2 and the RRS schedule described below. The draft summary reports will be prepared and made available for review within 1 year of FERC's approval of the final study plans.

6.1.6. Consistency with Generally Accepted Scientific Practice

The methodology described herein for the RRS is generally consistent with recreation resource research methodology and practices and are consistent with other comparable relicensing studies in the Pacific Northwest that involve larger hydroelectric projects and federally managed lands within and adjacent to the Project boundary. Study results will be adequate to conduct a subsequent recreation needs analysis and synthesis; SCL anticipates incorporating the results of the recreation needs analysis and synthesis into the PLP in the form of a proposed RMP for the Project.

6.1.7. Consultation with Agencies, Tribes, and Other Stakeholders

Input regarding the RRS, and its five study elements or chapters, was provided by relicensing participants during Recreation, Land Use, Aesthetics, and Socioeconomics (RLAS) Workgroup meetings held in Spokane and in Metaline Falls, Washington. These workgroup meetings occurred on May 24, June 28, July 26, and August 15, 2006. During these workgroup meetings, draft and revised study plans were presented and discussed. First, input was received from relicensing participants on the five individual study elements during the first three workgroup meetings. For the last workgroup meeting, individual study elements were combined into one RRS proposed study plan. This complete RRS proposed study plan was reviewed and discussed at the RLAS Workgroup meeting on August 15 in Spokane. Comments provided by relicensing participants on the draft RRS proposed study plan are summarized in Attachment 6-1 and can also be found in the workgroup meeting summaries (available on SCL's relicensing website (<http://www.seattle.gov/light/news/issues/bndryRelic/>)).

After draft versions of the RRS study plan were discussed at the RLAS Workgroup meetings, SCL further modified the study plan in response to comments and study requests filed with FERC by the USFS (letter dated August 31, 2006, containing the USFS's PAD/Scoping comments and official study requests; USFS 2006). Modifications included adding clarification, additional supporting rationale, and additional detail to address comments and specific components in the USFS recreation resource study request. SCL believes that the recreation resource study request received from the USFS is adequately addressed in the RRS proposed by SCL (as modified) in this PSP. Where differences remain between the study request and the proposed study elements, SCL has so noted at the applicable locations in the study plan.

6.1.8. Schedule

Meetings will be held with relicensing participants to resolve any identified issues and/or concerns regarding SCL’s PSP per the Process and Overview Schedule described in section 1.2 of this PSP. Finalization of the study plan for the RRS and implementation of the study will be in accordance with the general process schedule presented in section 1.2. Pending FERC’s final study determination, the RRS and its individual study elements will be implemented and completed per the tentative schedule defined in Table 6.1-8.

To the extent possible, individual RRS study element schedules will be coordinated with other resource studies, as applicable. As such, the schedule in Table 6.1-8 should be considered tentative and may be revised based on other study elements and/or other Project relicensing needs.

Table 6.1-8. Proposed Recreation Resource Study schedule.

Recreation Resource Study Elements	2007				2008			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Recreation Surveys	P	R	R	R, A, IR	R	A	A	SR
Regional Recreation Analysis	P				R	A	A	SR
Dispersed Recreation Use, Access, and Condition Analysis	P	R	R, A	SR				
Future Recreation Use Analysis	P					R	R, A	SR
Recreation Carrying Capacity Analysis	P				R	A	A	SR

Notes:

- P Study implementation planning including finalizing study implementation details, establishing field staffing needs, determining field schedule, etc.
- R Research including field activities and non-field based information gathering.
- A Data analysis and summary.
- IR Interim report preparation and distribution.
- SR Summary report preparation and distribution.
- Q Quarter

6.1.9. Progress Reports, Information Sharing, and Technical Review

The summary report (draft and final), as well as interim work products and progress reports (if any), will be made available for stakeholder review and comment per the Process and Schedule Overview provided in section 1.2 and the RRS schedule described above. Prior to release of the Initial and Updated study reports (which will include the results of the RRS), SCL will meet with agencies, tribes, and other stakeholders to discuss the study results, as described in section 1.2.4 of this document.

During the summer and fall of 2006, SCL collected and analyzed additional information about the Project area that was shared with relicensing participants during draft PSP preparation. This

information was provided to help focus RRS study efforts. This information included further investigations of the following:

- Abandoned trails in the Project area
- Proposed (circa 1969) Monument Bar recreation site on USFS-managed lands
- Roads in the Project area and public access to the reservoir
- Land ownership along the reservoir, including easements
- Shoreline conditions

6.1.10. Anticipated Level of Effort and Cost

The anticipated total cost for preparing the study plans (draft and final versions), conducting the assessments and analyses, and preparing the summary reports (draft and final versions) is approximately \$200,000 to \$250,000. Anticipated level of effort and estimated costs for each study element of the RRS are summarized below.

- *Recreation Surveys* — \$135,000 to \$155,000. Two persons would be expected to spend 3 to 5 days refining the study plan (draft and final combined), 2 persons spending 4 to 6 days reviewing recreation use areas, facilities, and access routes, up to 300 to 450 days to complete several components including a field survey, regional survey, and data collection effort, up to 60 days to analyze and compile the survey data, and up to 60 days to prepare and finalize summary reports (draft and final combined), plus expenses.
- *Regional Recreation Analysis* — \$20,000 to \$30,000. One to two persons would be expected to spend two days refining the study plan (draft and final combined), approximately 10 to 15 days to research regional recreation use areas, facilities, and opportunities (not including time associated with development, implementation, and data analysis resulting from the Recreation Surveys), and approximately 15 days to prepare and finalize summary reports (draft and final combined), plus expenses.
- *Dispersed Recreation Use, Access, and Condition Analysis* — \$20,000 to \$30,000. One to two persons would be expected to spend 1 to 2 days refining the study plan (draft and final combined), 10 to 15 days to complete the field inventory and access assessment, and approximately 15 to 20 days to prepare and finalize summary reports (draft and final combined), plus expenses.
- *Future Recreation Use Analysis* — \$10,000 to \$15,000. One person would be expected to spend 1 day refining the study plan (draft and final combined), 4 to 6 days analyzing the data collected, and approximately 10 to 15 days to prepare and finalize summary reports (draft and final combined), plus expenses.
- *Recreation Carrying Capacity Analysis* — \$15,000 to \$20,000. One person would be expected to spend 1 day refining the study plan (draft and final combined), 8 to 12 days analyzing the data collected, and approximately 12 to 15 days to prepare and finalize summary reports (draft and final combined), plus expenses.

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Personal Communications:

L. Johnson, SCL, personal communication, April 2005.

J. Spessard, BLM Adjudicator, personal communication, February 2006.

6.2. Land and Roads Study

The Land and Roads Study (LRS) will provide land ownership and property rights information about the Project area that will be used during relicensing, and will provide detailed information on Project-related roads and associated road conditions. SCL is currently collecting some of this land and road information. Relevant information from this research will be available to the Technical Contractor for use in this study.

This study was requested by the USDA Forest Service (USFS) and the U.S. Bureau of Land Management (BLM) (USFS 2006a). Portions of SCL's proposed study, as described below, are modified from the agency study request to reflect SCL's ongoing data collection efforts, to focus on Project-related data collection needs only, and to defer those portions of the requested study/analysis that are more appropriately addressed in the integrated resource analysis phase (see section 1.2.5 of the PSP). Portions of the study where the USFS/BLM and SCL differ in approach or timing are noted herein.

Regarding Project lands, one of the key goals of this study is to describe the Project facilities and use areas on federal lands that are necessary for the continued operation and maintenance (O&M) of the Project and to determine whether any of these areas that are currently outside the FERC Project boundary should be included within the boundary. In addition, this study will provide land rights and ownership information that will be pertinent in determining where resource management activities may take place on federally managed lands, and if there are any potentially conflicting uses or rights on these Project lands.

Regarding Project-related roads, goals of this study include defining the Project's use of roads on federally managed land and determining the current condition of these roads.

6.2.1. *Nexus between Project Operations and Effects on Resources*

The Project occupies federally managed lands and waters in the Colville National Forest (CNF) and the Spokane District of the BLM. The Project also requires some use of USFS-managed roads to access Project facilities. The Project's use of the federal land and roadway system creates the need for land ownership and other lands-related information and data on which to base sound resource and program management decisions.

Efficient O&M of the Project, as well as safe public access to the Project shoreline, depends on long-term road access to Project facilities, lands, and waters. Where USFS- or BLM-managed roads are needed to access Project resources, proper authorizations should be granted for their use by the USFS or BLM. Where USFS- or BLM-managed roads are needed solely for Project purposes, these roads should be considered for inclusion within the FERC Project boundary for the term of the new license.

6.2.2. Agency Resource Management Goals

USDA Forest Service (USFS)

Land

The Colville National Forest Land and Resource Management Plan (CNFP) (USFS 1988), as amended by the Inland Native Fish Strategy (INFISH), provides specific CNF-wide standards and guidelines relating to the use and management of USFS-managed lands. Land use standards are contained on page 4-55 of the CNFP and include the following:

- Existing special uses which conflict with USFS management objectives will be modified to comply or will not be renewed.
- Accomplish property boundary surveys, posting and marking to support planned or on-going resource projects, solve or prevent trespass, and assist CNF users in identifying public lands versus private lands.
- Access to USFS-managed lands will be obtained to meet CNFP goals and objectives.
- Disturbance from construction of utility facilities (electric, phone, water, gas lines) will be promptly rehabilitated.

This USFS direction, in conjunction with the standards and guidelines for specific resources and programs, provides the basis for the USFS's land use objectives.

Forest Service Manual (FSM) direction (FSM 7151) also states that all USFS-managed property boundary lines adjoining private, state, and public trust lands, such as Indian Reservations, shall be located, monuments installed, marked, and/or posted to prescribed USFS standards prior to undertaking land management activities that will occur near or adjacent to the property line (FSM 7152.03).

Roads

The National Forest Roads and Trails Act of October 13, 1964, authorizes USFS construction and maintenance of road systems used for accessing USFS-managed lands. This legislation also authorizes the granting of easements across USFS-managed lands and the imposing of requirements on non-USFS road users for maintaining these roads. Forest roads are generally authorized only for the administration and utilization of USFS-managed lands and are not intended to solely provide access to private or utility lands and uses. However, Forest road use authorizations and rights may be granted by the USFS to individuals and private and public entities to access their lands and facilities.

36 Code of Federal Regulations (CFR) Section 212 sets forth the requirements for the development and administration of the USFS transportation system, including the granting of access across USFS-managed lands. One of the goals of this study is to assess the need for long-term Project-related use of roads across USFS-managed lands and that proper USFS authorizations have been granted for this use, including appropriate management of resources along these routes.

U.S. Bureau of Land Management (BLM)

BLM's Spokane District Resource Management Plan (BLM 1985) does not discuss specific management goals of BLM-managed parcels within the Project vicinity. These parcels are generally managed for dispersed recreational use (J. Spessard, BLM Adjudicator, personal communication, February 2006).

6.2.3. Study Goals and Objectives

The overall goal of the LRS is to gather additional information on Project-related lands and roads so that appropriate decision making may occur during relicensing to address Project effects. Information from this study will also be made available for use in other relicensing resource studies, such as the Big Game Study (section 5.5), Erosion Study (section 2.1), and Dispersed Recreation Use, Access and Condition Analysis of the Recreation Resource Study (section 6.1).

The objectives of the LRS are to develop and document current information on Project-related land ownership, rights, and encumbrances, and Project-related roadway ownership, rights-of-way, road use, and access needs within and adjacent to the FERC Project boundary. This information will be used as a basis for discussions on a variety of Project-related analyses and activities.

6.2.4. Need for Study

Summary of Existing Information

Land

A summary of existing land ownership and use information is provided in section 4.8.10.2 of the Boundary Project Pre-Application Document (PAD) (SCL 2006). SCL is currently conducting additional research to further identify and verify land ownership in the Project area, including fee ownership, flowage and other easements, and other property rights. This proposed study will expand upon this information.

Roads

CNF transportation system mapping in GIS (available online at <http://www.fs.fed.us/r6/data-library/gis/colville/index.html>) shows the locations of existing USFS-managed roads in the area of Boundary Dam. This mapping also shows some of the private roads on privately owned land, along with WSDOT- and County-managed roads. In addition to this USFS transportation system mapping, the USFS maintains a road management database documenting the management objectives for all USFS-managed roads on the CNF. This database documents management and road standards, such as the design, vehicle clearance, and speed limit for each road on the CNF.

Lands located within and adjacent to the Project are relatively undeveloped. As a result, there are few roads providing direct access to the Project reservoir. The following are existing roads across USFS-managed lands that provide access to the Project area, as depicted on Reservoir Maps, Project No. 2144, Exhibit K, FERC File D-19247:

- The west-side access road provides access to the powerhouse, dam, and service areas. This road crosses over USFS-managed lands in Section 10, T40N, R43E within the FERC Project boundary shown on Exhibit K; however, the USFS has questioned whether subsequent road re-alignments may have moved this road out of the FERC Project boundary.
- Forest Roads (FR) 3165000 and 3165350 cross USFS-managed lands on the east side of the Pend Oreille River. FR 3165000 is needed for USFS resource management purposes from the junction with SR 31 to the junction with FR 3165200. FR 3165000 is the primary access route to the Vista House overlooking Boundary Dam. According to the USFS, FR 3165000 and FR 3165350 were constructed and then reconstructed by SCL, under a special use permit issued by the USFS in 1964. According to the USFS/BLM in their study request, this USFS permit was terminated in December 1971 and this road is currently maintained by Pend Oreille County under a cooperative arrangement between Pend Oreille County and SCL, as well as the USFS. The USFS states that there is some confusion over the jurisdiction for the road, which should be resolved in this study. The USFS also states that FR 3165350 is not needed for USFS resource management access purposes, which suggests this road is only used to access the east side of Boundary Dam and other Project lands.
- A portion of FR 3165200, and a non-USFS road that intersects FR 3165200, access the east side of the Pend Oreille River in the area of the Boundary Dam tailrace. These roads are on USFS-managed land in Section 2, T40, R43, and are outside the FERC Project boundary. The CNF uses FR 3165200 for resource management access purposes, while the non-USFS road is not needed by the USFS for resource management access purposes.
- FR 6200348 accesses the Project transmission lines between the Machine Hall and the Bonneville Power Administration (BPA) switching station. This road is also used by the CNF for resource management access purposes and is partially located within the FERC Project boundary.

Need for Additional Information

Existing information on Project lands and roads is presented in the PAD, section 4.8. SCL is currently conducting additional research on Project land and roads to further supplement this information. In their study request, the USFS and BLM have requested additional information, such as detailed roadway conditions, that does not currently exist. This study is intended to collect and analyze this additional information to meet the needs of the USFS and BLM.

6.2.5. Detailed Description of Study

Study Area

Land

For Project land ownership and rights, the study area will include all lands and waters within the FERC Project boundary, parcels immediately adjoining the FERC Project boundary, and any other lands needed to operate and maintain the Project.

Roads

For Project-related roads, the study area will include the area between the Pend Oreille River shoreline and the nearest State or County road or highway parallel to the river. On the east side of the Pend Oreille River, the study area will extend to SR 31 and County Road 3669 from Box Canyon Dam to below Boundary Dam; on the west side of the river, the study area will extend to SR 31 and County Road 2975 along the length of the Project, as well as SCL's Machine Hall and maintenance area and the Tailrace Recreation Area below Boundary Dam.

Proposed Methodology

This study will include researching available records with some data analysis and field work. Most of the information required for this study may be found in USFS, BLM, County, and SCL records. A summary of information to be gathered and displayed for the study area includes the following:

- Land:
 - Land ownership and mapped information in GIS
 - Property rights information
 - Property boundary survey information
 - Mining claim information (within the Project boundary)
- Roads:
 - Roadway rights-of-way (ROW)
 - Roadway easements
 - Road use agreements or authorizations
 - Road condition and maintenance
 - Roads needed for Project operations and maintenance
 - Roads that provide public access to the reservoir shoreline

Land Methodology

The land-based tasks that will be completed within the study area are described below.

Task 1) Land Ownership Analysis

Within the study area, land ownership will be identified in tabular and mapped (GIS) format and will include parcel name, tax parcel number (if applicable), legal description, and approximate acreage (if currently available). SCL initiated this work in 2005 and is continuing the effort in 2006. The record research is nearing completion and the results will be available by March 31, 2007.

Task 2) FERC Boundary Analysis

The FERC Project boundary and related SCL survey information will be compiled and displayed in tabular and mapped (GIS) format including legal description, location of surveyed lines (e.g., east line of NE1/4) and monuments (corners), date of survey, and record of survey filing information (if applicable). Results of this initial Project boundary research will be made available in 2007. Proposed revisions, if any, to FERC Exhibit G (formerly Exhibit K) drawings that define the FERC Project boundary will be provided in the License Application. SCL will adhere to FERC guidance on the preparation of Project exhibits (FERC 2005), including the FERC Project boundary. The USFS/BLM requested that the condition of survey monuments be assessed. SCL believes that an in-field assessment of survey monuments is not a FERC requirement, unless new Project facility construction is proposed or survey line inconsistencies are encountered. Appropriate geo-referenced survey monument data will be provided to FERC in a revised FERC Exhibit G.

Task 3) Mining Claim Analysis

Within the FERC Project boundary, current mining claim information will be collected and displayed in tabular and mapped (GIS) format including legal description, name, holder, and mineral survey (if applicable). The USFS/BLM requested a broader review of mining claims information in the river corridor; however, SCL believes that it is appropriate to address only mining claims within the FERC Project boundary where SCL has control or management authority.

Task 4) Private Shoreline Development Analysis

Private shoreline development potential will be estimated for parcels of private land directly adjacent to the FERC Project boundary, showing the currently documented (County approved) development potential (i.e., recorded subdivision) near the Project. The USFS/BLM requested a broader review of private development potential in the river corridor; however, SCL believes that it is appropriate to limit its analysis to private development potential surrounding the FERC Project boundary that may directly impact Project lands.

Roads Methodology

A three-step process will be used to identify Project-related road access needs for the Project, including Project operations and maintenance, and public shoreline access. The road-based tasks that will be completed within the study area are described below.

Task 1) Project Roadway Needs Analysis

Determine what roads across USFS- and/or BLM-managed lands are needed for known Project operations and maintenance during the term of the new license. This will be accomplished by evaluating the existing and proposed road system near the Project. The existing transportation system that accesses the Project will be evaluated to determine if currently available routes meet access needs for the safe and efficient O&M of the Project. In addition, SCL will analyze road access needs to active monitoring well sites. The USFS/BLM requested that existing and potential need for public/recreational roadway access to the Project also be analyzed. This

agency request will be addressed in a phased approach, initially as part of the Dispersed Recreation Use, Access, and Condition Analysis, a study element of the RRS (section 6.1). Analysis of future public/recreational access needs to the Project will be conducted during the integrated resource analysis phase (see section 1.2.5) when all or most study results are available for review, and in conjunction with the recreation needs analysis and synthesis and development of the Preliminary Licensing Proposal (including development of proposed protection, mitigation, and enhancement measures).

Task 2) Project Roadway Condition Analysis

Determine the condition of the existing road system needed for Project O&M, with respect to user vehicle types, soil and water resource impacts, and administrative use by the CNF or others. The current condition of the existing transportation system used by the Project will be inventoried and assessed. Roads will be evaluated for potential impacts to soil and water resources through erosion or mass wasting from the road prism. Road maintenance standards and guidelines in the CNFP, as amended, will be reviewed for roads on USFS-managed land. The evaluation of roads on USFS- and BLM-managed land for soil and water resource impacts and road prism stability will be done by a professional hydrologist, soil scientist, geologist, and/or engineer. Locations of soil movement outside of the road prism, and locations where mass wasting has impacted the road prism, will be assessed. This task will inventory the locations of soil erosion and mass wasting by road milepost. This task will result in a standard professional engineering report with tabular and mapped (GIS) information that describes the condition of the existing BLM and/or USFS road system needed for Project O&M activities. If appropriate, alternatives for road maintenance or repairs will be identified to reduce identified Project-related impacts to soil and water resources or to stabilize roads needed for Project operations or access. As noted above, the USFS/BLM requested that the potential need for additional public/recreational roadway access to the Project should be analyzed. If it is determined that additional roadway access to the Project is needed for public and recreational use, based on the results of the RRS and follow-on analyses noted above in Task 1, SCL will conduct future roadway condition analyses along these new routes.

Task 3) Project Road Use Easement and Permit Analysis

Determine if appropriate road use easements or permits exist for routes needed for Project O&M and if these routes cross non-SCL-owned land. Once the transportation network needed for current Project purposes has been determined, a search of appropriate records will be completed to determine if appropriate ROWs or other rights have been granted to SCL. If this research establishes that there are inadequate authorizations issued to SCL covering needed access across non-SCL-owned lands, then required authorizations will be identified. Road access and ROW information will be presented in tabular and mapped (GIS) format, including road name and/or number, land ownership, and documented ROW, easement, or road use agreement. As noted above, the USFS/BLM requested that the potential need for additional public/recreational roadway access to the Project should also be analyzed. If it is determined that additional roadway access to the Project is needed for public and recreational use, based on the results of the RRS and follow-on analyses noted above in Task 1, SCL will conduct a future assessment of appropriate road use easements or permits that may be needed along these new routes.

6.2.6. Work Products

LRS work products will include a draft and final study report that will include tabular and mapped (GIS) information and GIS shape files with metadata. The study reports may be separated into land and road components for review and use in other relicensing resource studies.

6.2.7. Consistency with Generally Accepted Scientific Practice

The LRS methodology described herein is generally consistent with land- and road-related research methodology and practices used in other comparable relicensing study plans in the Pacific Northwest involving large hydroelectric projects and federally managed lands within and adjacent to the FERC Project boundary. Study results will be adequate to address FERC requirements and USFS and BLM needs related to land and road resources.

6.2.8. Consultation with Agencies, Tribes, and Other Stakeholders

Comments and questions regarding road and land issues were received at the relicensing resource workgroup meetings in 2006. The USFS indicated that it was considering filing an official request for a roads-related study; however no specific study requests were made any stakeholders during the course of the workgroup meetings. In the USFS's PAD/Scoping comment letter, filed with FERC on August 31, 2006 (USFS 2006a), the USFS and BLM jointly submitted a request for a Lands and Access Study; this study proposal is presented in response to that request. SCL also had a follow-up conversation with USFS staff to clarify points made in the USFS/BLM study request; a summary of this communication is included in Attachment 6-1 to this section of the PSP.

6.2.9. Schedule

Meetings will be held with relicensing participants to resolve any identified issues and/or concerns regarding SCL's PSP per the Process and Overview Schedule described in section 1.2 of this PSP. Finalization of the study plan for the LRS and implementation of the study will be in accordance with the general process schedule presented in section 1.2. Pending FERC's final study determination, the LRS and its individual study elements will be implemented and completed per the proposed schedule defined in Table 6.2-1.

This study will provide information that will be useful for other studies and/or analyses. The LRS information will be compiled and presented during the first study season with the results made available by late 2007. To the extent possible, the LRS will be coordinated with other resource studies, as applicable. As such, the schedule in Table 6.2-1 should be considered tentative and may be revised based on other study elements and/or other Project relicensing needs.

Table 6.2-1. Proposed Land and Roads Study schedule.

Land and Roads Study Tasks	2007			
	Q1	Q2	Q3	Q4
Land				
1. Land Ownership Analysis	P, R	R, A	IR	SR
2. FERC Boundary Analysis	P, R	R, A	IR	SR
3. Mining Claim Analysis	P, R	R, A	IR	SR
4. Private Shoreline Development Analysis	P, R	R, A	IR	SR
Roads				
1. Project Roadway Needs Analysis	P, R	R, A	IR	SR
2. Project Roadway Condition Analysis	P, R	R, A	IR	SR
3. Project Road Use Easement and Permit Analysis	P, R	R, A	IR	SR

Notes:

- P Study implementation planning including finalizing study implementation details, establishing field staffing needs, determining field schedule, etc.
- R Research including field activities and non-field based information gathering.
- A Data analysis and summary.
- IR Interim report preparation and distribution.
- SR Summary report preparation and distribution.
- Q Quarter

6.2.10. Progress Reports, Information Sharing, and Technical Review

The study plan and summary report (draft and final), as well as interim work products and progress reports (if any), will be made available for stakeholder review and comment per the Process and Schedule Overview provided in section 1.2 and the LRS schedule described above. Prior to release of the Initial and Updated study reports (which will include the results of the LRS), SCL will meet with agencies, tribes, and other stakeholders to discuss the study results, as described in section 1.2.4 of this document.

6.2.11. Anticipated Level of Effort and Cost

It is estimated that the LRS (except for the engineering analysis noted below) will require approximately 500 to 600 person-hours at a cost of approximately \$50,000. A significant portion of the research and other information gathered and reported under this study is currently being collected and analyzed by SCL.

An engineering assessment within the LRS will describe Project-related road condition and any maintenance or repairs needed to reduce impacts to soil and water resources. This effort will likely require 1 to 2 weeks of field work for a team consisting of a professional hydrologist or soil scientist, geologist, and engineer, and 1 to 2 weeks of report writing. Additional time for SCL and stakeholder consultation will be needed. It is estimated that the total cost for this engineering assessment will be approximately \$50,000.

6.2.12. Literature Cited

- FERC (Federal Energy Regulatory Commission). 2005. Managing Hydropower Project Exhibits: Guidance Document. Washington, D.C. November 2005.
- National Forest Road and Trail Act. 1964. P.L. 88-657, 78 Stat. 1089, as amended. 16 U.S.C. 532-538.
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- USFS. 2000. Forest Service Manual (FSM) 7151. WO Amendment 7100-2000-1. Chapter 7150 – Surveying.
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- USFS. 2006b. Colville National Forest GIS Data. Available online at: <http://www.fs.fed.us/r6/data-library/gis/colville/index.html>.

**Attachment 6-1: Summary of Stakeholder Consultation on the
Recreation Resources Study Plan and Related
Topics**

Summary of comments on draft Recreation Resource Study plan and related topics, made at the Recreation, Land Use, Aesthetics and Socioeconomics Workgroup meetings (2006).

Comment format	Date	Stakeholder	Affiliation	Stakeholder comment	SCL response to comment
Early Information Development Efforts					
Verbal	5-24-06	G. Koehn	USFS-Colville NF	G. Koehn asked if all easements on Project lands were going to be mapped by SCL, and if these would be shown in a table and map format.	Easements will be mapped and shown in a table and map format.
Recreation Resources Process flow chart					
Verbal	6-28-06	S. Rosebrough	NPS	S. Rosebrough said that the overview of the process was very helpful, and she appreciated the responsiveness of SCL to stakeholder comments at the May workgroup meeting.	Comment acknowledged.
Verbal	6-28-06	J. Eychaner	IAC	J. Eychaner asked if SCL had a definition for dispersed recreation, noting that he defines dispersed recreation as any informal recreation site that is user-made.	SCL agreed with Jim's definition.
Verbal	6-28-06	J. Eychaner	IAC	J. Eychaner noted that his office was conducting a new SCORP statewide survey and that the results will be presented in CTED tourism regions, rather than the state as a whole as in the past. He said preliminary datasets would be available between March and April, 2007, with the final results available in November 2007.	Comment acknowledged.
Verbal	6-28-06	J. Bodie	USFS-Colville NF	J. Bodie asked where SCL will provide an inventory of recreation sites including ownership information.	The PAD already provides a very good inventory, but the Recreation Carrying Capacity Assessment study will provide a further update of this inventory of sites.
Verbal	6-28-06	J. Eychaner	IAC	J. Eychaner asked if SCL would be examining trails in terms of motorized use or only as walking, hiking, and bicycling use. He cautioned against use of the term	SCL will perform an inventory of all uses. When looking at opportunities to develop recreation opportunities, SCL would likely

Comment format	Date	Stakeholder	Affiliation	Stakeholder comment	SCL response to comment
				“multiple use” as that implies motorized use.	prioritize consistently with State information, focusing on non-motorized trails only. However, if results of the inventory show high demand for motorized use SCL would acknowledge that need.
Verbal	6-28-06	J. Bodie G. Koehn	USFS-Colville NF	J. Bodie and G. Koehn (USFS) noted that USFS is reevaluating goals in terms of off-highway vehicle (OHV) access on USFS-managed land, although it is not currently allowed. Jann said that OHV use patterns are being studied, and most likely certain areas will be designated for OHV use and other areas will be closed to motorized use. Jann clarified that the USFS is not planning on closing currently designated motorized trails, just closing off the areas where motorized use is not legal or sustainable.	Comment acknowledged.
Verbal	6-28-06	S. Rosebrough	NPS	S. Rosebrough said that high demand for OHV access noted by L. Johnson (SCL) would probably become apparent in both the visitor surveys and focus groups.	Comment acknowledged.
Verbal	6-28-06	J. Bodie	USFS-Colville NF	J. Bodie said that she would like a clearer definition of “trail” that includes water trails. She added that she had not seen mention in the PAD of two major trails at Sullivan Lake.	The Regional Recreation Analysis would provide further inventory of regional recreation opportunities and would build off the information presented in the PAD.
Verbal	6-28-06	J. Eychaner	IAC	J. Eychaner said that if the opportunity arose to decommission roads to trail status, he has a good document on this process from the State of California that he will forward to Michele Lynn. Jim also suggested that SCL look at the 1991 State Trail Plan for a solid definition of “trail”.	Comment acknowledged.

Comment format	Date	Stakeholder	Affiliation	Stakeholder comment	SCL response to comment
General Discussion					
Verbal	5-24-06	J. Bodie S. Rosebrough	USFS-Colville NF NPS	S. Rosebrough and J. Bodie indicated that SCL should be looking at future potential for trails (both land-based trails and water-based trails). They didn't feel that, to date, SCL has adequately explained how they would address statewide demand for trails, per WA's Statewide Comprehensive Outdoor Recreation Plan (SCORP) findings. They reminded SCL that FERC requires licensees to provide adequate public access (where safe) to hydroproject lands and waters to meet the recreating public's needs.	SCL is still in the study phase and wants to understand more about the Project area and current recreation use and demand for trails specifically in the Project area, before assessing potential trail route opportunities. Once additional Project information is known, SCL plans to evaluate potential trail route opportunities and constraints where appropriate. SCL acknowledges that trail use is in high demand on a statewide basis per SCORP and that SCL will address trail and public access needs at the Project. SCL will conduct a Recreation Needs Analysis Synthesis with stakeholder input in 2008 and 2009.
Verbal	5-24-06	S. Rosebrough	NPS	S. Rosebrough asked that SCL provide a more detailed description of its plans to conduct the Recreation Needs Analysis Synthesis, both in writing in the RRS study plan and at an upcoming meeting of the workgroup.	At the June 28 workgroup meeting, SCL will discuss its plans for synthesizing and assessing all the data collected during the study plan phase and incorporating it into a Recreation Needs Analysis Synthesis, and ultimately into a Project Recreation Management Plan (RMP).
Verbal	5-24-06	J. Bodie	USFS-Colville NF	J. Bodie said that the February meeting had included a broader discussion of statewide recreation needs, such as trails, and what role the Boundary Project played in the larger picture of recreation in the region. Jann said that she did not see specific details of this discussion reflected in the	Comment acknowledged.

Comment format	Date	Stakeholder	Affiliation	Stakeholder comment	SCL response to comment
				meeting summary. She said that stakeholders will want to know how these issues are resolved, and that she would like to see how those stakeholder concerns are tracked through the process. She said SCL should look at both the State's and other broader survey data to help define visitor preferences in the Project area since use levels at the Project are low. Jann mentioned that random sampling was a problem with the last National Visitor Use Monitoring (NVUM) study conducted by the USFS. Jann also noted that she appreciated SCL's acknowledgement of the overall importance of the Scenic Byway to the region and to the local area.	
Verbal	5-24-06	S. Rosebrough	NPS	S. Rosebrough said that, at the last meeting, there was consensus amongst many of the stakeholders present that there is a need for a trail study and a water-trail study; this was not reflected in the previous meeting summary.	Changes will be made to the February summary to better reflect stakeholder concerns as voiced today, and stakeholders should feel free to comment on future meeting summaries.
Verbal	5-24-06	J. Bodie	USFS-Colville NF	J. Bodie said that Debbie Wilkins (USFS) had attended the February meeting to have a discussion about collaboration put on the record, and Jann did not see that discussion clearly recorded in the summary.	That discussion will be reflected in an addendum to the 2/16/06 meeting summary.
Land Use and Socioeconomics discussion					
Verbal	5-24-06	G. Koehn	USFS-Colville NF	G. Koehn acknowledged the fact that SCL does not have a socioeconomic study planned, and said that he understands there is uncertainty as to what approach a future socioeconomic study may take or if one is ultimately necessary. However, Glenn said, he felt it was important that SCL consider possible types of models that may be used in the future so that relevant data	Comment acknowledged.

Comment format	Date	Stakeholder	Affiliation	Stakeholder comment	SCL response to comment
				could be collected now as other studies are being conducted, thereby providing a baseline of socioeconomic information. Glenn said that this baseline could become germane when discussing PM&E's and trade-offs in terms of the local economy. Glenn added that it would be beneficial to have this baseline for long-term demands on the Project.	
Verbal	5-24-06	G. Koehn	USFS-Colville NF	When asked if the socioeconomic section of the PAD provided the necessary amount of baseline information or if there were any data gaps, G. Koehn replied that he was not aware of any data gaps.	Comment acknowledged.
Verbal	5-24-06	J. Bodie	USFS-Colville NF	J. Bodie added that there are different opinions among Pend Oreille County residents and County Commissioners regarding future socioeconomic requirements, and that a socioeconomic model of some sort would be helpful in dealing with those differences.	As SCL collects information, they will be able to look at the Project's socioeconomic effects. It would be important to utilize an appropriate method to find answers to socioeconomic questions, and that it is a question of timing as to when SCL did this. SCL personnel are holding quarterly meetings with Pend Oreille County Commissioners to remain informed about socioeconomic issues in Pend Oreille County and any potential Project effects.
Recreation Resource Study Plan:					
<i>Common Study sections</i>					
Verbal	5-24-06	J. Bodie	USFS-Colville NF	J. Bodie asked if SCL planned on addressing the local economy in recreation studies.	The socioeconomic section of the PAD provides a thorough description of the current socioeconomic conditions in the Project area and that in general the Project has a beneficial effect on

Comment format	Date	Stakeholder	Affiliation	Stakeholder comment	SCL response to comment
					the local economy. SCL thinks it should wait to have more information on Project effects and potential PM&E measures before deciding how to analyze economic effects on the local economy, but that there will be a discussion about tourism (see Land Use and Socioeconomic discussion).
Verbal	5-24-06	J. Short	WDOE	J. Short commented that Pend Oreille County has a new Shoreline Master Program (SMP) and asked if SCL has reviewed it and considered its contents including goals that may relate to the Project.	County goals will be included in the study plan.
Verbal	5-24-06	J. Bodie	USFS- Colville NF	J. Bodie commented that the USFS has constant updates on their processes and that SCL and the USFS will need to stay in close contact to make sure the current updates are provided to SCL in a timely manner.	Comment acknowledged.
Verbal	5-24-06	J. Bodie	USFS-Colville NF	J. Bodie noted concerns that if conditions were especially dry (potentially forcing campground closures) or rainy for the 12-months of data collection, data may not reflect actual use patterns in the Project area. Jann said the USFS asked the Pend Oreille County PUD to collect data over a 3 year period for the Box Canyon Project and average it.	Other visitor surveys in relicensing studies generally consist of up to 12 months of data collection. SCL could collect more data in 2008 if anomalies appeared, such as severe forest fires, particularly bad weather over a long timeframe, significant road closures, or security restrictions in key areas. However, under the ILP process, the window of opportunity is essentially under two years. If needed, SCL could also correlate SCL-collected data with existing or planned USFS survey data or make percentage adjustments to use

Comment format	Date	Stakeholder	Affiliation	Stakeholder comment	SCL response to comment
					numbers (up or down).
Verbal	5-24-06	J. Bodie	USFS-Colville NF	J. Bodie suggested coordination between the planned USFS exit surveys (NVUM) and SCL-conducted recreation studies. Jann added that she would like Sue Kocis (USFS) to be present at that future meeting. Jann also said that results from the USFS visitor survey would likely not be available for SCL to use the data until the spring of 2009; however, if reports come out in time for SCL to meet their April 2009 study plan deadline, a comparison of results would be beneficial.	Based on the schedule, SCL and the USFS could meet in 2007 to coordinate specific logistics.
Verbal	5-24-06	S. Rosebrough	NPS	S. Rosebrough noted that the overall recreation study plan should contain a component discussing future potential recreation opportunities, and a more detailed description of the Recreation Needs Analysis Synthesis. Susan suggested that future potential recreation opportunities be addressed as a separate study, as both the Henry M. Jackson and Wells Projects in WA included them as such. Susan also drew attention to water trails, both existing and those with potential to exist.	Comment acknowledged.
Verbal	5-24-06	J. Bodie	USFS-Colville NF	J. Bodie added that in order to accommodate demand/need over the next 30-50 years, SCL should utilize existing data collected by agencies that show there is a known current demand/need for recreation opportunities statewide, instead of starting at the point where SCL is assessing demand/need in the Project area. Jann added that within the FERC relicensing process, SCL is obligated to provide access (where safe) to Project lands	The analysis of future potential recreation opportunities (including trails) will be conducted after this initial study phase. This phase of the study is basically information gathering. SCL does not feel that the timing is right for a broad-based trail feasibility study because information on existing public access to the Project area is still lacking. SCL intends to

Comment format	Date	Stakeholder	Affiliation	Stakeholder comment	SCL response to comment
				and waters within the Project area.	adequately address the need for trails and public access at the Project and can better define the next steps of how this topic will be addressed during relicensing. SCL doesn't yet know if public access is inadequate at specific sites and use areas within the Project area. Once public access is inventoried and assessed, potential gaps in public access to the Project will be defined and further studied.
Regional Recreation Analysis					
Verbal	5-24-06	J. Bodie	USFS-Colville NF	J. Bodie noted that 50 miles from the Project includes the town of Newport, but that USFS observes use in the Colville NF by residents from Spokane which is about 90 miles from the Project. Jann suggested that SCL extend the boundary to include Spokane in the study.	Recreation visitor survey results (from various sources) will be used to help define what the regional boundary for Project area visitors should be (the current PSP currently indicates 50+ miles, so the outer limit is not yet known).
Dispersed Recreation Use, Access, and Impact Analysis					
Verbal	5-24-06	J. Bodie	USFS-Colville NF	In response to a question asking if stakeholders had a sense of how many dispersed recreation sites existed within the Project area, J. Bodie said that the USFS has a GIS layer of dispersed recreation sites on Forest lands, and that she would pass this data on to SCL.	Comment acknowledged.
Verbal	5-24-06	J. Bodie	USFS-Colville NF	In response to a question asking the progress of USFS's road mapping effort, J. Bodie replied that the USFS has inventoried all roads on NFS lands, but has only conducted a more detailed road analysis for Level 3-5 roads (on a scale of 1-5) in the Colville NF thus far. Jann added that once the road information is	Comment acknowledged.

Comment format	Date	Stakeholder	Affiliation	Stakeholder comment	SCL response to comment
				collected, it will set the stage for the development of Road Management Objectives tied to those roads. For example, she said, if a Level 1 road (i.e., it is supposed to be barricaded or closed) is being breached consistently, it would be valuable to find out the purpose for which the road is being breached and used.	
Verbal	5-24-06	J. Bodie	USFS-Colville NF	J. Bodie asked if SCL was going to address access through other land ownerships. She described an example of a private road that leads to the reservoir that could potentially provide access for Project visitors: this road is on the Pend Oreille Mine property.	It would be valuable to know where and how the public is accessing the reservoir shoreline from major parallel roads, even if outside of SCL-managed lands.
Verbal	6-28-06	J. Bodie	USFS-Colville NF	J. Bodie said that Rod Bonacker (USFS) had commented that he would like to see water level fluctuations at dispersed sites analyzed. She also suggested SCL re-review the Boundary Reservoir Recreation Area Plan (USFS 1965) to see if any of the old concepts are still worth considering.	It would be valuable to examine the 1965 Plan so that the thinking gets carried over into the current relicensing process and gets reevaluated.
Recreation Visitor Surveys					
Verbal	6-28-06	S. Rosebrough	NPS	S. Rosebrough commented that she thinks “visitor” should be taken out of the title, because the study is broader than just people who are visiting the area.	The change in title was made.
Verbal	6-28-06	J. Bodie	USFS-Colville NF	J Bodie expressed concern that SCL was not capturing the entire “local” population by including only Metaline, Metaline Falls, and Ione in that population for area resident questionnaires and focus groups. L. Johnson (SCL) said that he thinks residents of Salmo and Trail, BC also consider themselves locals.	It makes sense to include the residents of Salmo and Trail, BC in local focus groups and area resident questionnaires.
Verbal	6-28-06	J. Bodie	USFS-Colville NF	J. Bodie said that the USFS may have use data for Crescent Lake Recreation Area and	This historical data may not be particularly useful to the current

Comment format	Date	Stakeholder	Affiliation	Stakeholder comment	SCL response to comment
				offered to pass it on to Michele Lynn. Jann added that there are two notable dispersed recreation sites at Crescent Lake.	analysis, but may be considered later to look at trends.
Verbal	6-28-06	S. Rosebrough	NPS	S. Rosebrough asked why SCL was treating SCL-managed and non-SCL-managed sites differently for visitor counts.	SCL has responsibility and more control on SCL-managed sites. On non-SCL-managed sites, SCL only really needs to know how users are using the Project shoreline zone and accessing the reservoir. However, SCL will also gather information from site managers on the remainder of these sites to get an entire picture of what's going on at each site and if there are any issues to be addressed.
Verbal	6-28-06	J. Eychaner	IAC	J. Eychaner suggested that SCL examine use patterns at local RV parks through conversations with vendors, in case users are relocating to those parks when Boundary recreation areas are full.	The study would address private RV parks and collect basic information from the operators/vendors on use patterns, and also invite RV park operators to focus groups.
Verbal	6-28-06	J. Bodie	USFS-Colville NF	J. Bodie suggested talking with visitors at Sullivan Lake and Mill Pond in case they are using those areas as an alternate to Boundary Recreation areas.	SCL will plan on speaking with concessionaire operators at Sullivan Lake and Mill Pond. J. Eychaner said he would be very surprised if there were a link between the facilities at Boundary and Sullivan Lake.
Verbal	6-28-06	J. Eychaner	IAC	J. Eychaner asked if SCL plans to ask questions of dispersed site users.	'Yes', as long as these people can be reasonably accessed.
Verbal	6-28-06	G. Koehn	USFS-Colville NF	G. Koehn asked if the Technical Contractor will be developing the visitor questionnaire and if stakeholders would be involved in that process.	The Technical Consultant would be developing the questionnaire in early 2007, but SCL will include text in the study plan to ensure a feedback loop with stakeholders. Once the questionnaires are answered, they will be compiled

Comment format	Date	Stakeholder	Affiliation	Stakeholder comment	SCL response to comment
					and summarized for the Project area and the region as a whole. Results will be reported by the end of 2008.
Recreation Carrying Capacity					
Verbal	7-26-06	J. Eychaner	IAC	J. Eychaner noted that he did not see specific indicators and standards being developed as part of this study. He asked for an explanation as to why this wouldn't be done now.	This analysis will use a number of capacity standards to make determinations, such as 60-80% occupancy utilization, crowding perception levels (scale of 1-9), and basic ecological impacts. However, SCL will integrate a finer level of capacity detail into a potential monitoring program in the RMP, as needed. Both analyses will use an adaptation of the Limits of Acceptable Change (LAC) methodology; looking at what issues arise, and then figuring out what are appropriate indicators and standards are for a given area.
Verbal	7-26-06	D. Wilkins	USFS	D. Wilkins asked how carrying capacity will be assessed for dispersed recreation sites.	Typical capacity assessments of dispersed sites include evaluations such as proximity to wetlands (in feet), amount of bare earth at the site (%), vegetation damage observed, erosion observed, degree of sanitation problems observed, etc.
Verbal	7-26-06	J. Eychaner	IAC	J. Eychaner noted that the U.S. Army Corps of Engineers and others have done work on water carrying capacity and he'd like to see that incorporated.	This analysis would include an assessment of both the land and the water surface by zone, such as the Water Recreation Opportunity Spectrum (WROS) methodology.
Verbal	7-26-06	J. Eychaner	IAC	J. Eychaner asked how SCL will deal with carrying capacity for trails.	SCL would identify major trails in the study area (they are few) and identify if there are any observed

Comment format	Date	Stakeholder	Affiliation	Stakeholder comment	SCL response to comment
					capacity issues associated with them. The study may include assessments of trailhead capacity, for example, but will likely not assess trail use density at a given time. This will need to be explored more deeply later and integrated into the Recreation Surveys study element.
Verbal	7-26-06	D. Wilkins	USFS	D. Wilkins noted that if dispersed sites are proliferating, she thinks that is an indication of demand.	SCL will need to complete its Dispersed Recreation Use, Access, and Condition Analysis first, but there aren't many shoreline dispersed sites or trails observed to date in the Project area. This is a likely a result of very steep topography and dense forest in most Project areas.
Verbal	7-26-06	J. Eychaner	IAC	J. Eychaner noted that a standard implies absolute targets or goals, and that SCL should consider using the words "references or guidelines" instead.	Standards may imply too great a level of specificity for this assignment, and the word "guideline" is also a good word to use in this case. SCL would add the word guideline to the study plan, however, since this analysis is an LAC-based methodology, SCL wanted to retain the word "standard" that is part of that methodology.
Verbal	7-26-06	J. Eychaner	IAC	J. Eychaner said there is an aspect to carrying capacity that is social. He said that some people want the opportunity to congregate and others want the opportunity for privacy – this can be a reflection of ethnic differences as well.	This would be addressed through the data collected in the Recreation Surveys.
Verbal	7-26-06	J. Eychaner	IAC	J. Eychaner noted that managerial carrying capacity should be factored in as well.	SCL agreed, and said SCL's managerial capacity would be

Comment format	Date	Stakeholder	Affiliation	Stakeholder comment	SCL response to comment
					based on policies, rules and regulations, physical capacity, facility capacity, security, and how recreation impacts operations and other resource areas.
Future Recreation Use					
Verbal	7-26-06	J. Bodie	USFS	J. Bodie noted that she needs to send SCL the USFS Trends Analysis.	Comment acknowledged.
Verbal	7-26-06	D. Wilkins	USFS	D. Wilkins noted that the Trends Analysis showed about 50% of use coming from the Spokane area, followed by lesser amounts from Coeur d'Alene and Pend Oreille County. She said that SCL should also examine Dean Runyan's work and a University of Idaho study done in the 1990s.	Comment acknowledged.
Verbal	7-26-06	J. Eychaner	IAC	J. Eychaner said he doesn't have too much confidence in the results from the 1999 Cordell study. He also said that the previous WA SCORP projections are totally wrong. The future is unknown, but one has to make their best guess. SCL should also be looking at desired future conditions; he said focus groups can be a good way to help get at this. Jim noted that he had seen a presentation on Pennsylvania wild areas, and land managers there took the approach of asking who they wanted to attract and why. This is one way of planning for activities that are sustainable.	Comment acknowledged.
Verbal	7-26-06			D. Wilkins asked if SCL would be using a model to project future use needs.	SCL would develop tables based on existing use levels and anticipated increases in primary activities (% annual increases) at the Project area, in 10-year increments. This would likely be done in Excel. Different

Comment format	Date	Stakeholder	Affiliation	Stakeholder comment	SCL response to comment
					assumptions could be made and projected out (different % increases per year, different activities, different areas/sites, etc.) to identify a range of future use. SCL is more comfortable with a range of projected use levels, rather than a specific number.
Verbal	7-26-06	S. Rosebrough	NPS	S. Rosebrough asked if the results of the focus groups will be applied to projections for the future.	We could learn some things that may affect some of our assumptions, but it is too early to tell yet.
Verbal	7-26-06	D. Wilkins J. Eychaner	USFS IAC	D. Wilkins noted that the number of RV parks in Pend Oreille County is growing, and that overall the County is gearing up for and encouraging increased tourism. J. Eychaner noted that as more people move to rural areas from the city, the nature of the recreation in rural area changes.	SCL would be incorporating all available data and will consider growth in tourism and surrounding areas with input from the Regional Recreation Analysis.

Michele Lynn - study plans

From: "Eychaner, Jim" <JimE@IAC.WA.GOV>
To: 'Michele Lynn' <michele.lynn@Seattle.Gov>
Date: 6/1/2006 2:51 PM
Subject: study plans
CC: Barbara Greene <barbara.greene@Seattle.Gov>, "'Susan_Rosebrough@nps.gov'" <Susan_Rosebrough@nps.gov>

Hi, Michelle -- here are some of my comments on the Boundary study plan document

1. Recreation visitor survey. The proposal is *de rigueur* for relicensing but insufficient if the utility is to gain an understanding of unmet and potential recreation as required by FERC. Surveying what people do today could result in a limited perspective that today's recreation will be what people want to do for the next 50 years. The survey is fine if it is balanced with statewide SCORP results, as well as secondary data sources such as county or Forest Service surveys. For example, IAC can demonstrate statistically that recreation behavior changes significantly every 10 years, if not in shorter cycles of 5 to 7 years. Go to <http://www.iac.wa.gov/iac/docs.htm> and scroll down to Recreation Trends at the bottom -- see "Estimates of Future Participation in Outdoor Recreation," especially the first series of tables.
2. There is too much emphasis on dispersed recreation. While important and part of the overall context of recreation, the study as described addresses dispersed recreation in a pejorative sense, stressing "impacts" over opportunities. Dispersed recreation behavior such as user-made trails must also be recognized as evidence of unmet demand that can be better managed.
3. Carrying capacity is a tool that is of interest, but the study begs the question "capacity for what?" -- especially on the reservoirs. I am aware of different theories that differentiate between various water (and land) uses -- e.g., water skiing requires much more surface area than paddling. A discussion is needed concerning desired future conditions to help make choices about "capacity for what."
4. Future use. This is key considering the utility will seek a 50 year license. IAC will assert that the utility is already at least a decade behind current demand, based on our SCORP, and on what the utility's study plan document clearly describes as the utility's poor recreation monitoring and recording keeping. Current high level demand relevant to the project is for trails, wildlife observation, and sightseeing. These current high-demand activities are being overlooked in favor of low-demand activities (see next section). The future is unknowable, but we need to avoid using obsolete assumptions about recreation demand so that management avoids inappropriate actions in the future.
5. Fishing/creel survey -- there is too much emphasis on this activity. Our data shows that fishing participation has declined dramatically over the past 20 years, and we further project flat if any growth in the activity. Contemporary recreation data clearly indicates that people prefer watching wildlife, including fish, over fishing. Certainly, existing fishing opportunities need to be preserved, but it is not appropriate to conduct a special study in this area when other state priorities are being overlooked.
6. As I have said before, our SCORP document is simple and to the point in making recommendations to hydro operators. The utility's study plan document seems to have been unusually selective in its references to SCORP. For your convenience, here is our recommendation:

IAC recommends that non-federal hydropower project operators enhance inventory with trails and

paths for walking and bicycling, manage dispersed shoreline camping, improve access for on-water recreation, and improve opportunities for nonconsumptive interaction with nature including fish and wildlife. In instances where the license holder has provided recreation land or facilities to other agencies, IAC recommends that the license holder also provide maintenance and operation assistance.

Let me briefly review this set of recommendations.

- Trails and paths are only indirectly addressed in the dispersed study. Trails and paths need to be addressed in a specific study that determines the capacity for new and/or improved trails. FERC goes directly to SCORP when reviewing study plans, results, and recommendations, and failure to address this key area would result in a recreation report that is incomplete and inconsistent with a key FERC-recognized comprehensive plan. IAC has developed study plan requests for trails in other proceedings: one developed for and accepted by Snohomish PUD for the current Jackson Project is attached. IAC will be requesting a similar study for the Boundary project no later than the July FERC scoping meetings. Keep in mind that the definition of "trail and path" is quite open at present, and that IAC is interested in appropriate facilities compatible with their settings. We are not proposing a paved 10-foot bike path at the water's edge! We are proposing that the capacity for trails in and adjacent to the project boundary, including all property owned by the utility, be studied.
- Manage dispersed shoreline camping. This reasonably includes other forms of recreation, and is covered by the dispersed recreation study cited above. The key is manage, not discourage or eliminate.
- Improve access for on-water recreation. This concept is addressed in the proposed study plan. IAC is aware that "improved" does not necessarily mean "more" or "bigger." We know from experience that improvements to existing sites can add to capacity with minimal cost and minimal impact to other resources.
- Improve opportunities for nonconsumptive interaction with nature including fish and wildlife. Simply put, we know that "Watchable Wildlife" including observing and photographing wildlife is one of the most popular activities statewide, having grown beyond the participation of "traditional" fishing and hunting exponentially. Nature trails, observation points, interpretive materials or programs, and other concepts fall under this category. IAC will ask that the study plan include specific examination of this area, again no later than the July FERC scoping meetings. Again, failure to address this key area would result in a recreation report that is incomplete and inconsistent with a key FERC-recognized comprehensive plan.
- Maintenance and operation assistance. IAC acknowledges this does not necessarily require a formal study. However, any inventory would be incomplete without a site condition assessment including estimated remaining service life of boat launches, restrooms, and all other facilities inventoried. Numbers alone do not inform decisions.

It may be useful for the recreation group to get a sense of the "big picture" of recreation statewide, including past trends and recent participation. I made a presentation on this topic to the recreation group assembled by Douglas PUD for the Wells project a couple of months ago, and I would be happy to make the same presentation to the Boundary group.

I plan to attend the June 28-29 meetings. However, I am happy to meet or talk at any time to clarify or explain my comments. I appreciate the complexity of relicensing, having worked through a number of them in recent years, and it is not my intent to make the job harder. It is my intent to help make your products more complete and consistent with FERC-recognized comprehensive plans. Thank you for your consideration.

<<FERC study trail study request Jackson Project.doc>>

From: Michele Lynn
To: Bodie, Marjorie J
Date: 8/9/2006 4:26:29 PM
Subject: Re: Page 5

Jann,

Thanks for scanning and sending this.

Michele

>>> Marjorie J Bodie <mbodie@fs.fed.us> 8/1/2006 10:55 AM >>>

The following message was attached to my original message:

"I scanned in the 1992 letter signed by the Forest Supervisor that the Forest uses when making consistency determinations relative to Forest Plan Visual Quality Objectives (I did not include the pages from areas of the Forest that would not be applicable to the Boundary Dam Project).

The reason this letter is important, is that the Forest Plan document fell short when it came to displaying "where" the Sensitivity Levels One and Two were applied (now called Concern Level One and Two under the SMS).

You will notice that for the Sullivan Lake Ranger District, under Sensitivity Level One, they list Boundary Dam Reservoir Road, Boundary Dam Vista Road, Pend Oreille River, Crescent Lake, Hwy. 31, and the County road to Gardner Cave. Also note that on the first page, the Ranger District recommended that they drop the Gardner Caves access Road and the Boundary Dam Reservoir Road to a Sensitivity Level Two, but that was not done.

For the Forest Plan Revision, I did not see any changes to the above list other than dropping the Boundary Dam Reservoir Road entirely, which I think makes sense due to the restrictions now in place. In other words, this is not a road the public can freely travel. I'm sure it was in the list previously because it was the access route to the visitor center."

(See attached file: Page_Five.jpg)

From: Michele Lynn
To: Eychaner, Jim
Date: 8/17/2006 11:56:32 AM
Subject: Re: stakeholder involvement plan

Thanks for your thoughts, Jim.

I guess the title, '*Stakeholder* Involvement Plan' may lead one to think it addresses ALL stakeholders. Of course any potential stakeholder can plug into the current process if they'd like; however, I know we are developing other opportunities for non-agency/tribal entities to participate (such as submitting updates for publication in local newspapers, holding public meetings, etc.).

Michele

>>> "Eychaner, Jim" <JimE@IAC.WA.GOV> 8/17/2006 11:28 AM >>>
Hi, Michele, I read through the plan and at first thought I was reading a "study review plan." I guess I was expecting to see how SCL would reach out to people -- forums, focus groups, newsletter, e-mail, or whatever. That said, however, the document does describe the study process and how some stakeholders can plug in to the study process -- I guess that's OK.

I also reviewed the "Recreation Resource Study." I am pleased to see that previous comments have been incorporated -- e.g., private providers have been included, how development could affect future recreation patterns, standards/guidelines, dispersed condition in place of dispersed "impacts." I have good confidence in the RRS at this time and look forward to the implementation of the study plan.

Thanks for the opportunity to take a look.

Record of Phone Conversation

With: Glenn Koehn, USFS, CNF

Date: September 14, 2006

I called Glenn to clarify an item contained in the USFS's Lands and Access Study Request. Referring to the following statement in the study request, I asked Glenn whether an easement was issued to SCL for the west side access road (it is implied in the statement but is not definitive: "Currently, CNF records how that the west side Boundary Dam access road, which crosses NFS lands (Sheet 1 of 9, Exhibit K) is included in the project boundary. Forest Service records do not show any other easements or road use permits granted to SCL" (page 4 of study request). Glenn said that this road across NFS land is authorized under SCL's current FERC license. Glenn went on to say that the last sentence in this paragraph is inaccurate. He said that the USFS had issued some authorizations over NFS lands to SCL for a few of the roads that access monitoring wells.

7 AESTHETIC / VISUAL RESOURCES

Based on review of existing information, additional information gathered in 2005 and 2006, and consultation with agencies, Seattle City Light (SCL) has identified the need for a study to evaluate the potential effect of continuing Boundary Project operations and potential proposed changes to the Project on sensitive aesthetic/visual resources in the Project area. This information will be developed through the Aesthetics/Visual Resource Study, described in this section.

Relicensing studies proposed by SCL that are related to aesthetic/visual resources but described under a different resource area (as indicated in the summary table presented in Attachment 1-1) include:

- Recreation Surveys (see Recreation Resource Study, section 6.1 of this PSP)
- Erosion Study (see Geology and Soils, section 2.1 of this PSP)

Additionally, studies of noxious weeds conducted in 2005 and 2006 will also be reviewed for the relicensing analysis.

7.1. Aesthetic / Visual Resource Study

Continuing Project operations and potential proposed changes to the Project may potentially affect sensitive aesthetic/visual resources in the Project area and the aesthetic/visual experience of visitors and residents using Project lands and waters and adjoining lands. For example, shoreline erosion (to the degree that it may be related to Project operations) may potentially impact the visual character of the Project area in some locations.

The Aesthetic/Visual Resource Study is designed to identify culturally and visually sensitive landscapes within and adjacent to the Project boundary, and to identify ongoing Project operational effects or proposed changes to the Project that have the potential to affect sensitive landscapes. If significant Project-related effects are identified, potential alternatives for minimizing these effects (and the general feasibility of these potential alternatives) will be identified.

7.1.1. *Nexus between Project Operations and Effects on Resources*

Ongoing Project-related operational effects and potential changes to the Project in the future may affect the visual character and visual quality of the surrounding landscape. Project facilities, including Boundary Dam, the Machine Hall, the Tailrace Maintenance Area, and 0.5-miles of transmission lines, are concentrated at the northern end of the Project in a very remote area. These facilities are not visible from the Scenic Byway (SR 31) or from County Road 2975 leading to Gardner Caves because of their remote location. Stationary viewpoints from which the public can view Project facilities are from adjacent SCL-managed recreation sites, including the Forebay Recreation Area, Tailrace Recreation Area, and Vista House. The Vista House was sited to provide a clear viewpoint of the dam during its construction, and the Tailrace Recreation Area was built to accommodate public tours of the Visitor's Gallery within the Machine Hall.

These facilities are considered attractions by visitors and are offered as points of interest along the Scenic Byway in byway-related literature. Project facilities may also be seen from non-stationary viewpoints including the Project access road leading to the Tailrace Maintenance Area/Recreation Area, and from boats in the forebay of Boundary Reservoir. Views afforded by boat from the Boundary Reservoir include the top of Boundary Dam, the log boom floating barrier in the forebay, the Forebay Recreation Area, and the Vista House and adjacent overlook above the dam.

Shoreline erosion has been observed on and adjacent to the reservoir in all three reaches (Upper [south], Canyon, and Forebay [north]). Natural erosion occurs along all rivers and reservoir shorelines; the extent to which shoreline erosion may be induced by the Project is not currently known and will be further explored in the Erosion Study (as described in section 2.1). Erosion sites, and potential solutions to control Project-related erosion, may adversely affect the visual experience of some visitors, primarily boaters on the reservoir.

Other potential Project-related impacts to visual resources in the Project vicinity may include dispersed shoreline recreation sites on the reservoir, road cuts along Project-related roads, and the presence of invasive weeds in areas affected by Project operations.

7.1.2. Agency Resource Management Goals

Land and aesthetic/visual management within and adjacent to the Project boundary is under the jurisdiction of a number of entities, including the USFS, the BLM, Pend Oreille County, and the Towns of Metaline and Metaline Falls. Of these entities, Pend Oreille County oversees management of privately owned shorelines and adjacent land within the Project boundary by means of the County's Shoreline Master Program, Comprehensive Plan, and Critical Areas Ordinance. In addition to the County's policies, the USFS and the BLM adhere to land and resource management policies defined in their respective Forest Plan and Resource Management Plan, as applicable. The Towns of Metaline and Metaline Falls also play a role in land management within their town limits, which extend up to the reservoir shoreline; however, neither Town's comprehensive plans include aesthetic/visual resource management directives at this time.

USFS

A portion of the Project area is managed by the Colville National Forest (CNF). The USFS manages the aesthetic/visual quality of lands and waters under its jurisdiction using the USFS' Scenery Management System (SMS) (USFS 1995) as a methodology and tool for inventory and analysis. SMS evolved from and replaces the USFS's previous methodology called the Visual Management System (VMS), resulting in several terms that were modified as noted below. SMS methodology differs from VMS in that it increases the role of constituents throughout the inventory and planning process. SMS-related components (in whole or in part) are used by the USFS to identify, achieve, and sustain a desired landscape character and scenic integrity on USFS-managed lands and waters.

SMS planning variables are defined for specific management areas on USFS-managed lands based on current conditions and/or desired management direction. Aesthetic/visual quality or

scenic integrity, an SMS variable, is being assessed during the Forest Plan revision process currently underway. Scenic Integrity Levels (Very High to Unacceptably Low) are assigned to the landscape as a frame of reference for measuring later achievement of the scenic objectives prescribed for specific management areas. Assignment of scenic integrity levels considers the valued attributes of the existing landscape character being viewed, and includes not only natural and natural-appearing attributes, but also those direct human alterations that have become accepted over time as positive landscape character attributes. Scenic integrity levels include (USFS 1995):

- Very High (Unaltered Landscape)
- High (Appears as Unaltered Landscape)
- Moderate (Slightly Altered Landscape)
- Low (Moderately Altered Landscape)
- Very Low (Heavily Altered Landscape)
- Unacceptably Low (Extremely Altered Landscape)

USFS-managed lands in the Project vicinity are currently categorized as Moderate (Slightly Altered Landscape) (USFS 2005a).

Visual Quality Objectives (VQOs) in the current Colville National Forest Plan (CNFP) are Retention or Partial Retention of natural landscape qualities (USFS 1988). In areas where the designated objective is Retention, management activities should not be visually evident. In areas where the designated objective is Partial Retention, “management activities remain visually subordinate to the characteristic landscape.” In both cases, the foreground viewshed should be perceived as natural appearing.

SMS methodology also categorizes the USFS-managed landscape into three Concern Levels: 1 (High), 2 (Moderate), and 3 (Low). Concern levels (formerly called Sensitivity Levels in VMS methodology) represent the degree of scenery importance for specific viewing locations such as communities, recreation areas, roads, and trails. Identified Concern Level designations can be validated in SMS methodology through the constituent analysis component.

After the current CNFP was completed in 1988, a letter from the CNF Forest Supervisor (USFS 1992) was distributed to all Forest Districts, providing additional direction for making visual quality consistency determinations related to proposed actions and guidance on the appropriate VQOs to be used by CNF Districts. This 1992 letter lists the most sensitive visual quality areas/corridors in the CNF as Concern Levels 1 and 2 (terminology revised from previous Sensitivity Levels). Concern Level 1 areas at or near the Project include:

- Boundary Dam Reservoir Road
- Boundary Dam Vista House Road
- Pend Oreille River corridor
- Crescent Lake area

- SR 31 corridor (Scenic Byway)
- County Road 2975 (road to Gardner Caves)

In 1992, the Sullivan Lake Ranger District (formerly Republic Ranger District) recommended that the CNF reduce the rating of County Road 2975 leading to Gardner Caves and Boundary Dam Reservoir Road to Concern Level 2; however, these rating changes were not made at that time for consistency reasons. Under the current CNFP revision planning effort, these ratings will again be reassessed. The Project road leading down to the Tailrace Area may be dropped altogether due to security restrictions now in place that limit public access to the Tailrace Area (J. Bodie, CNF Landscape Architect, personal communication, August 2006).

In addition to draft scenery management goals being prepared by the USFS for the CNFP revision, other aesthetic/visual resource landscape planning factors are also being developed. Interrelated landscape planning factors being developed at this time include Valued Landscape Character descriptions, Landscape Character Goals, Niche Area descriptions (USFS 2005b), and Scenic Integrity Objectives (Very High to Unacceptably Low). Several Niche Areas were developed by the USFS to help guide recreation site types and appropriate levels of development, including aesthetic/visual characteristics, in the CNF and adjacent areas. The Project area falls within two Niche Areas including the International Byways Niche and the Remote Access Niche (in a portion of the Forebay and Tailrace areas only). These Niche Areas are described by the USFS as follows:

- *International Byway Niche* — “Major travel routes networking Canada and the U.S. communities, multitude of scenic byway designations, six International gateways all help provide transportation and economic connection between communities and countries. Driving for pleasure, scenery and wildlife viewing and interpretation, water-related, highly developed campgrounds and day use facilities (including ski area) are located adjacent to the byways and help support international and regional touring events (motorized and non-motorized).”
- *Remote Access Niche* — “Wettest climate on the Colville; steep and dramatic mountainous country with sub-alpine Wilderness provides extensive views in all directions. Rare animal species habitat provides wildlife viewing, forest product gathering, and snowmobiling; while motorized access to non-motorized back country provides an opportunity for solitude.”

Niche Area descriptions are being integrated into the CNF planning narratives of Valued Landscape Character. Valued Landscape Character descriptions still need to be further developed by the USFS to include a listing of the positive attributes within each area. This will be accomplished through constituent analysis and content analysis of existing information.

North Pend Oreille Scenic Byway / International Selkirk Loop

The North Pend Oreille Scenic Byway passes through the Project vicinity on SR 31 from its junction with SR 20 to the U.S.-Canada border (approximately 27 miles). This scenic byway is also part of the larger International Selkirk Loop. The designation of these routes as scenic byways acknowledges and provides for the continued protection of the spectacular scenic quality

of the Project vicinity. Seven sites have been proposed as components of the North Pend Oreille Scenic Byway (Eastern Washington University, 1999). Five of the proposed sites are in, adjacent to, or provide views of the Project vicinity and its scenic attractions. These sites include Box Canyon Overlook, Eagle's Nest View Site, Sweet Creek Falls Rest Stop, Metaline Falls Overlook Pocket Park, and Crescent Lake. The Box Canyon Overlook, Crescent Lake, and Sweet Creek Falls Rest Stop are existing sites. An interpretive sign has been installed at Eagle's Nest View Site. Metaline Falls Overlook Pocket Park (parcel adjacent to the SR 31 Bridge) has not been constructed to date. A viewpoint/highway pull off with views of Abercrombie/Hooknose Mountain is also planned in the vicinity.

Local communities, stakeholders, and land management agencies cooperated on the development and ongoing implementation of the corridor management plan (under the direction of a citizen's advisory board) for the North Pend Oreille Scenic Byway. The vision of the corridor management plan (WDOT 2003) is as follows:

“The North Pend Oreille Scenic Byway provides visitors with an opportunity to discover and interpret the legacy that local pioneers have left for modern-day residents while preserving the all-important life styles of those residents. Mining, logging, and the production of hydroelectric power represent the historic and modern-day economic base for this area. The Scenic Byway offers access to one of the more active artist and performing arts communities in the Pacific Northwest. Those who follow the Byway along the Pend Oreille River are greeted by vistas of snow-capped mountains, rural villages, and viewing sites for wildlife, cultural legacy interpretive sites, and all backdropped by a unique natural environment. This Byway is a scenic highway connecting Washington, British Columbia, and Idaho.”

The corridor management plan outlines a set of goals and objectives that cover transportation and land use, economic development and tourism, heritage resources, and plan involvement and coordination. These goals include:

- Travel safety for visitors, local residents, and industry.
- Scenic Byway improvements that complement existing natural and developed environments and support land uses and activities desired by the local community.
- Expanded opportunities for economic development and tourism that are sensitive to the needs and values of the local community.
- Increased awareness and appreciation of heritage resources by visitors and community residents.
- Protection and enhancement of all heritage resources.
- Community-based planning process that promotes a high level of community involvement and ownership in plan development and supports collaboration in plan implementation.

The corridor management plan is not a regulatory document; however, it is intended to be a reference document that entities (including local communities, private land owners, WDOT, Pend Oreille County, and the USFS, among others) may use to guide stewardship activities along the scenic byway corridor.

7.1.3. Study Goals and Objectives

The goals of the Aesthetics/Visual Resource Study are to assess the aesthetic/visual resources in the Project vicinity and to identify potential effects on those resources from Project operations and proposed changes to the Project. Specific objectives of the study are as follows:

- Describe the visual characteristics of the Project and its surrounding landscape.
- Identify visually sensitive areas within Project lands and waters and adjoining lands.
- Identify and map key viewpoints and other locations that have the potential to provide enhanced viewing opportunities of the Project area by the public.
- Assess ongoing Project operations and potential Project modifications for consistency with the scenic landscape goals and policies in the new CNFP when it is finalized.
- Identify potential adverse effects of Project operations and proposed changes to the Project on visually sensitive areas.
- Describe the general feasibility of potential options and enhancement opportunities to mitigate potential adverse Project operational effects or proposed changes to the Project, where appropriate.

7.1.4. Need for Study

Summary of Existing Information

In general, the Project is located within a scenic reach of the Pend Oreille River with limited opportunities for public access and viewpoints; viewing opportunities are limited by the steep topography, forest vegetation, and land ownership patterns. The Project is surrounded by the Chewelah Mountains to the west and the Selkirk Mountains to the east. The Project vicinity is generally characterized by forested hills and mountains, rock outcrops and high cliffs, and some rural development along the SR 31 corridor, especially in and around the towns of Metaline and Metaline Falls (Cassidy 1997). SR 31 is a designated national and state scenic byway (North Pend Oreille Scenic Byway), as well as a designated international scenic byway (the International Selkirk Loop is a designated All-American Road). The Project vicinity has multiple scenic attractions, including Boundary Dam and Machine Hall/Visitor's Gallery, Boundary Reservoir, the Pend Oreille River canyon occupied by the reservoir, Peewee Falls, and the Selkirk Mountains, among others. The primary modifications that have been made to the Project area's scenic character include development such as shoreline recreation sites, towns of Metaline and Metaline Falls, SR 31 bridge, mining-related buildings and mine tailing disposal areas downstream of Metaline Falls, Project hydroelectric facilities, and non-Project regional electric transmission and distribution lines, among others.

The Pend Oreille River in the Project vicinity flows through a valley of varying width and steepness. Much of the portion of the Project from Boundary Dam upstream (south) to Metaline Falls is located in a relatively narrow, deep gorge section of the river canyon. By contrast, the portion of the reservoir from Metaline Falls upstream (south) to the Box Canyon Dam tailrace is located in a wider, more open valley.

Timber harvesting, along with mining, has historically been one of the primary extractive industries in the Project region. Logging in the Project vicinity has resulted in large forested areas of mixed regeneration (conifer and deciduous species), directly influencing the aesthetic/visual character of the area. While logging has shaped the vegetation patterns, the landscape is typical of second-growth landscapes throughout the region. Some of the landscape seen by the general public in the Project region is that of a working forest, with visibly distinct harvest units of varying ages. However, logging (both current and past) is less evident around Boundary Reservoir, as well as on USFS-managed land, especially in the Salmo-Priest Wilderness Area to the east of the Project.

Apart from the reservoir, the Project's hydroelectric facilities are not visible from many locations within the Project vicinity. These facilities can be seen from near the dam and from the northernmost part of the reservoir by boat.

Formed by Boundary Dam, Boundary Reservoir extends approximately 17.5 miles upstream to the base of the Box Canyon Dam. At full pool (1,990 feet NGVD 29 [1,994 feet NAVD 88]), the reservoir has 43,000 acre-feet of storage in the top 40 feet and a total surface area of approximately 1,636 acres. The maximum allowable reservoir drawdown is 40 feet. Upstream from Metaline Falls, seasonal high flows can cause the reservoir/river to rise above the 1,990-foot NGVD 29 (1,994 feet NAVD 88) elevation. (See section 1.3.5 of this PSP for a description of Project operations.)

The daily summer and winter reservoir fluctuation is visible at certain locations on the reservoir. Exposed shoreline areas and sandbars become more visible at lower reservoir elevations. Considering the limited public access and viewpoint opportunities in the Project vicinity, features that become visible during lower reservoir elevations are likely most visible to visitors on the reservoir (in boats) and at land-based viewpoints along the upper part of the reservoir from Box Canyon Dam to the SR 31 bridge at Metaline Falls.

The upper portion of the reservoir (from Box Canyon Dam to the SR 31 Bridge at Metaline Falls) can be viewed from several locations along SR 31 (North Pend Oreille Scenic Byway), which extends along the western shoreline of the reservoir to the SR 31 Bridge. The lower part of the reservoir (from the SR 31 Bridge to Boundary Dam) is barely visible from a few publicly accessible viewpoints because of the steep topography along the reservoir shoreline and forested hilltops between the reservoir and SR 31 (to the east) and County Road 2975 (to the west).

From the reservoir surface and shoreline, the upper (southern) part of the reservoir offers broad views of a primarily rural setting including homes and businesses in and around the towns of Metaline and Metaline Falls, portions of old and new mining activities, and views of managed hillsides. The shoreline is generally fragmented, with a mix of natural and developed/managed

features. Public access along the upper part of the reservoir is limited by land ownership patterns and steep shorelines, though the reservoir is visible from SR 31, which travels along the western shoreline of the upper reservoir.

The lower (northern) part of the reservoir provides a more pristine and natural landscape compared to the upper part. The scenic features of the lower part are dominated by steep canyon walls with spectacular rock formations, several tributaries, waterfalls, and a distinctly semi-primitive setting. The lower part ends at the Boundary Dam forebay, a wider section of the reservoir that provides more expansive vistas of the surrounding mountains. Also visible from the forebay are the Project facilities, including the crest of Boundary Dam, electrical transmission lines (0.5 mile) and towers, and the Forebay Recreation Area. Peewee Falls, a 200-foot waterfall along the western shoreline of the reservoir, can also be viewed by boat from the forebay. Several other smaller waterfalls dot the canyon landscape and are visible by boat. Public access is limited along the lower part of the reservoir by very steep, rocky shorelines. As a result, much of the lower part of the reservoir can only be viewed by boat.

In addition to the Boundary Reservoir, the following facilities and sites are visible and/or provide viewing opportunities in the Project area:

- *Boundary Dam* — completed in 1967, Boundary Dam is a double-curvature, thin-arch type concrete dam. It is 340 feet high, 32 feet thick at its base, 8 feet thick near its top, and 740 feet long at its crest. There are two large, radial-gated spillways at each end of the dam and seven sluice gates located 200 feet below the crest of the dam. The grey, concrete dam and spillways can be viewed from the Vista House and Tailrace Recreation Area. The crest of the dam is also visible from the Forebay Recreation Site, as well as from the reservoir by boat. The dam is not visible from any public travel routes.
- *Tailrace Maintenance Buildings and Storage Yard* — several Project-related maintenance buildings, storage yards, and access roads are located below Boundary Dam, north of the Tailrace Recreation Area. Two large metal maintenance buildings, one of which is light green and the other white, are the visually dominant structures in this area. These structures, as well as other large maintenance/storage yards and access roads, are only visible from the Vista House and from the access road leading to the Tailrace Recreation Area.
- *Transmission Lines* — transmission lines run from the Project powerhouse to a switching station located just west of the Project area. The transmission lines exit the underground powerhouse through a series of six transformer bays located along the rock cliff to the west of the dam. The transmission lines run up the cliff to a set of metal support towers (“pickle forks”), across the access road to the Forebay Recreation Site, and uphill to a Switching Station near County Road 2975. The Project’s transmission lines from the Machine Hall to the Switching Station are approximately 0.5 mile long. The other powerlines in the vicinity of the Project are either Bonneville Power Administration (BPA) transmission lines or Pend Oreille County Public Utility District (PUD) distribution lines. The Switching Station at the termination of the Project transmission lines is a BPA facility.

The Project transmission lines and support towers are visible from the Vista House and Forebay Recreation Area, as well as from the public access road to the dam area. The transformer bays and exiting transmission lines are visible from the Vista House and Tailrace Recreation Area.

- *Machine Hall Entrance* — the Machine Hall, which houses the Project turbines, is located entirely underground, with only its two access tunnels visible from publicly accessible viewpoints. The large, grey, concrete access tunnels to the Machine Hall are located at the Tailrace Recreation Area and are visible from both the Tailrace Recreation Area and the Vista House.
- *Forebay Recreation Area* — this site is located on the western shoreline of Boundary Reservoir immediately upstream of the Project dam. The facilities provided at this site include a boat launch, picnic area, campground, and viewpoint. The site affords scenic views of the northern section of the reservoir and its steep, tree-lined shoreline, the crest of the dam and white, floating log boom, the Vista House, a rocky hill that contains the Machine Hall, and the Project’s transmission lines and “pickle fork” towers, as well as the forested hills and mountains that surround the Project area.
- *Tailrace Recreation Area* — this site is located immediately downstream of Boundary Dam on the western bank of the Pend Oreille River. The site provides day use facilities (covered picnic tables, parking, etc.) and also acts as the meeting place for public tours of the Project. By looking south, visitors to this site can view the dam, tailrace, transformer bays, transmission lines and towers, and entrances to the Machine Hall. Directly across from the Tailrace Recreation Area, the river’s steep eastern bank and promontory with the Vista House can be observed. To the north, with views extending into Canada, visitors can see the Pend Oreille River and the forested hills and mountains that typify the Project vicinity and adjacent area in Canada, and BPA transmission lines.
- *Vista House* — this site is located immediately downstream of Boundary Dam on a high promontory along the eastern bank of the Pend Oreille River. The site provides day use facilities including a building with interpretive displays, an outdoor viewing platform, picnic tables, and a short trail to the viewing platform providing a closer vantage point of the dam and canyon. The site was built in the 1960s so visitors could watch the construction of the dam. Views of the dam from the Vista House are still considered one of the scenic attractions of the Project vicinity. From the Vista House and the viewing platform located at this site, visitors are afforded scenic views of the Pend Oreille River, Boundary Dam and Reservoir (forebay area), the Tailrace Recreation Area, the rock face of the powerhouse, transformer bays, transmission lines and towers, tailrace maintenance buildings and storage yards, and forested hills and mountains surrounding the Project area.
- *Boundary Recreation Area (BLM)* — the BLM manages a small, primitive site along the western shoreline of Boundary Reservoir north of Metaline. The forested site is accessed by vehicle off County Road 2975 and then along a 2.65-mile, two-track dirt road that crosses private, BLM-managed, and USFS-managed land. The recreation site provides two picnic tables and fire rings and a small cove area with some shoreline protection. Large scenic vistas are generally not available at the BLM’s

Boundary Recreation Area. Instead, views from this site include the forested reservoir shoreline and Everett Island, a forested island off the western shoreline of the reservoir. Views of Boundary Reservoir from this site are limited by the presence of Everett Island and the steep shoreline topography.

- *Metaline Waterfront Park and Boat Launch (Town of Metaline)* — this site is located on the western shoreline of Boundary Reservoir in the Town of Metaline. The site consists of a boat launch, picnic facilities, and other day use site amenities (playground area, restrooms, user-defined shoreline trails, etc.). Visitors to this site are afforded views of the wider section of Boundary Reservoir immediately upstream from the SR 31 Bridge, the forested shoreline of the reservoir, and the forested hills and mountains of the region. Additionally, some structures and the tall, grey cement plant in the town of Metaline Falls are also visible on the eastern shoreline of the reservoir across and to the north of Metaline Waterfront Park.
- *Campbell Park and Boat Launch (Pend Oreille County PUD)* — this site, operated by Pend Oreille County PUD as part of the Box Canyon Hydroelectric Project (FERC No. 2042), is located immediately downstream of Box Canyon Dam on the western shoreline of Boundary Reservoir. Campbell Park provides day use and camping facilities, including picnic and camping sites, a swimming lagoon and beach, visitor center, and a boat launch with access to Boundary Reservoir. The viewshed at this site is dominated by hydroelectric-related facilities associated with the Box Canyon Project, including Box Canyon Dam, power-house, maintenance buildings and storage yards, and transmission lines and towers. In addition to the hydroelectric facilities, visitors to this site are also afforded views of the upper part of Boundary Reservoir, as well as the forested hills and mountains found along the reservoir shoreline and in the surrounding region.

Need for Additional Information

An evaluation of the effects of Project operations and potential proposed changes to the Project on aesthetic/visual resources is required as part of the FERC relicensing process, to describe existing conditions and to determine the need for and identify potential protection, mitigation, and enhancement (PME) measures that address any Project effects on these resources. Potential aesthetic/visual quality-related PME measures may ultimately be addressed (in the Preliminary Licensing Proposal and Final License Application) in the context of other related resource areas, such as site improvements and facilities in a proposed Recreation Management Plan (RMP) for the Project, potential erosion control measures investigated in the Erosion Study, and potential measures to control noxious weeds along the shoreline and on islands.

7.1.5. Detailed Description of Study

Study Area

The study area for the Aesthetics/Visual Resource Study primarily includes the lands and waters within and adjacent to the Project boundary. However, the area between the reservoir shoreline and adjoining parallel County roads and/or State highway will also be included where public viewing opportunities of the Project area are afforded. Potential PME measures that may result

from this study will be limited to the lands and waters that are directly affected by the Project or where SCL has management responsibility.

Proposed Methodology

The CNFP is currently being updated by the USFS and is scheduled to be completed in 2006 or 2007. Changes to the CNFP may affect aesthetic-related landscape planning factors and management prescriptions within USFS-managed lands and waters in the CNF. As such, it is important for the Technical Consultant conducting this study to consult with the CNF prior to initiation of the study to understand all aesthetic/visual resource management planning factors and objectives in the new CNFP.

The proposed Aesthetic/Visual Resource Study methodology includes the following six primary tasks:

- Collect existing aesthetic/visual resource information.
- Define key observation points (KOPs) (includes the river).
- Rate aesthetic/visual resources and their condition from these KOPs.
- Assess potential project-related adverse effects/negative conditions and policy inconsistencies, if any.
- Describe the general feasibility of potential options and enhancement opportunities to mitigate potential adverse Project operational effects or proposed changes to the Project.
- Develop a summary report.

Each of these proposed tasks is described below.

Collect Existing Aesthetic/Visual Resource Information

Existing aesthetic/visual resource information from the CNF (approved CNFP and final Niche Planning in 2006 or 2007) will be collected and reviewed. These data and landscape planning factors will include, among others: Valued Landscape Character descriptions, desired Landscape Character Goals, Niche Area descriptions (International Byway and Remote Access), Scenic Integrity Objectives, GIS viewshed data and mapping for the centerline of major roadways parallel to the Project and the centerline of the reservoir surface (to be provided by the CNF), and Concern Level 1 and 2 travel routes and use areas in the Project vicinity.

Existing aesthetics/visual resource attribute information about the Project vicinity will also be collected from available sources, such as Visitor Center and Vista House guest comments, and tourism information.

Define Key Observation Points

Preliminary KOPs in or adjacent to the Project area have been defined, mapped and photographed during development of the Pre-Application Document (PAD) (SCL 2006). These

Preliminary KOPs were selected based on clear viewing opportunities of the Project area by the general public. Preliminary KOPs include:

- Sites within and along the SR 31 Scenic Byway corridor, such as the Eagle Nest Viewpoint;
- Project-area recreation sites, such as the Forebay Recreation Area and Metaline Waterfront Park;
- Views from the towns of Metaline and Metaline Falls; and
- The Boundary Reservoir surface area.

Existing aesthetic/visual resource character and viewing opportunities were described in the PAD for each Preliminary KOP. In this study, the Preliminary KOPs will be reviewed and more detailed existing character and viewing opportunity descriptions will be developed based on field reconnaissance (land and water), as well as from information collected in the PAD and developed in the previous task. In consultation with the USFS, additional KOPs may be added or existing ones may be deleted based on the results of additional field reconnaissance, and KOPs will be defined for use in identifying positive attributes and negative features related to Valued Landscape Character descriptions in the CNFP. Existing land-based KOPs in the analysis done for the PAD are likely adequate; however, additional on-water reservoir KOPs (from watercraft) may be required to fully characterize existing conditions in the Project area and potential Project effects.

Rate Aesthetic/Visual Resources and Conditions from KOPs

At each KOP, the existing condition of aesthetic/visual resources will be rated. A Visual Conditions Form will be developed, in consultation with the USFS, to identify and record observed conditions and potential adverse Project effects, if any. This form will be based on other aesthetic/visual resource evaluation forms used on other hydroelectric relicensing studies, incorporating components of SMS methodology, where applicable.

In addition to resource information to be collected via the Visual Conditions Form, aesthetic/visual resource condition and preference questions will be asked of area residents and other visitors to the Project area. These questions will be included in the Recreation Surveys, an element of the Recreation Resources Study, and will be asked in both questionnaires and during focus group workshops. This effort will provide a constituent analysis listing of positive attributes and a frame of reference within the Valued Landscape Character description for the area.

Assess Policy Consistency and Potential Adverse Project-Related Effects

At each KOP, potential adverse effects on aesthetic/visual resources caused by Project operations or proposed changes to the Project will be assessed. The visibility of ongoing Project operations or proposed changes to the Project from each KOP will be catalogued. Disturbed sites or use areas that may negatively impact aesthetic/visual quality, but which could potentially be enhanced through various means, will be mapped and catalogued. Within the CNF, the condition at each KOP will also be evaluated for policy consistency with the approved CNFP

(anticipated in 2006 or 2007). Landscape planning factors to be considered in this assessment will include Valued Landscape Character description, desired Landscape Character Goals, Niche Area descriptions (International Byway and Remote Access), Scenic Integrity Objectives, and Concern Level 1 and 2 travel routes and use areas. Potential scenic landscape policy or planning inconsistencies on USFS-managed lands and waters will be noted, if any.

Describe the General Feasibility of Potential Options and Enhancement Opportunities to Mitigate Potential Adverse Project Operational Effects or Proposed Changes to the Project

Assuming existing or potential adverse Project-related effects to aesthetic/visual resources are identified in the previous task, potential solutions or options to address these adverse effects will be defined and evaluated for feasibility and effectiveness. Potential PME opportunities will be identified and considered only for lands and waters that are directly affected by the Project or where SCL has management responsibility.

Develop a Summary Report

The results and conclusions of the Aesthetic/Visual Resource Study will be summarized in text, maps, photos, and tables, as appropriate. The report will: (1) provide an overall description of aesthetic/visual resources in the Project area, (2) identify any observed adverse Project operational effects or effects of proposed changes to the Project on these resources, and (3) describe the general feasibility of potential solutions or options to protect, enhance, or mitigate these resources, as appropriate. The summary report will also analyze the Project's consistency with scenic landscape policies and planning guidelines for USFS-managed lands and waters per the approved CNFP (anticipated in 2006 or 2007) and related scenery management analyses conducted by the CNF.

7.1.6. Work Products

The following work products/reports will be provided for the Aesthetics/Visual Resource Study:

- Draft Summary Report
- Final Summary Report

Draft and final summary reports will be provided to relicensing participants for technical review and input per the Process and Schedule Overview provided in section 1.2 and the study schedule described below. The draft summary report will be prepared and made available for review per the schedule defined below.

7.1.7. Consistency with Generally Accepted Scientific Practice

The methodology described herein for the Aesthetics/Visual Resource Study is generally consistent with standard aesthetic/visual research methodology and practices and is consistent with other comparable relicensing study plans in the Pacific Northwest that involve large hydroelectric projects and federally managed lands within and adjacent to the project boundary.

Study results will be adequate to help develop future potential PME measures for Project area aesthetic/visual resources, if needed.

7.1.8. Consultation with Agencies, Tribes, and Other Stakeholders

Input regarding the Aesthetics/Visual Resource Study was provided by relicensing participants during a Recreation, Land Use, Aesthetics, and Socioeconomics (RLAS) Workgroup meetings held in Spokane, Washington, on July 26 and August 15, 2006. During these two meetings, draft study plans were presented and discussed. Comments provided by relicensing participants on the draft study plan are summarized in Attachment 6-1 and can also be found in the workgroup meeting summaries (available on SCL’s relicensing website (<http://www.seattle.gov/light/news/issues/bndryRelic/>)).

7.1.9. Schedule

In addition to the consultation described above, SCL will hold meetings with relicensing participants to resolve any identified issues and/or concerns regarding SCL’s PSP per the Process and Schedule Overview described in section 1.2. Pending FERC’s final study determination, the Aesthetics/Visual Resource Study will be implemented in 2007 and completed in 2008 per the general schedule shown in Table 7.1-1.

Table 7.1-1. Schedule for Aesthetic/Visual Resource Study.

Activity	2007				2008			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Final study implementation planning, including establishing field staffing needs, if any, and determining final schedule								
Research and analysis including field and non-field activities								
Draft Summary Report preparation and distribution								
Draft Summary Report review and comment								
Final Summary Report preparation and distribution								

The Aesthetics/Visual Resource Study schedule will be coordinated with other resource studies, as applicable, including the Recreation Resource Study and Erosion Study, among others. As such, the schedule described above is considered tentative and may be revised based on other resource studies and/or other Project relicensing needs.

7.1.10. Progress Reports, Information Sharing, and Technical Review

The Draft and Final Summary Reports, as well as interim work products and progress reports (if any), will be made available for stakeholder review and comment per the Process and Schedule Overview provided in section 1.2 and the Aesthetics/Visual Resource Study schedule described above. Prior to release of the Initial and Updated study reports (which will include the results of the Aesthetic/Visual Resource Study), SCL will meet with agencies, tribes, and other stakeholders to discuss the study results, as described in section 1.2.4 of this document.

7.1.11. Anticipated Level of Effort and Cost

The anticipated total cost for conducting the analyses and preparing the summary reports (draft and final versions) is approximately \$30,000 to \$35,000. One to two persons would be expected to spend 5 days developing the study implementation plan, approximately 10 to 20 days to research the visual character of the Project area and to identify potential Project effects and solutions (not including time associated with development, implementation, and data analysis resulting from the Recreation Surveys; see Recreation Resource Study, section 6.1), and approximately 10 to 20 days to prepare and finalize summary reports (draft and final combined), plus expenses.

7.1.12. Literature Cited

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**Attachment 7-1: Summary of Stakeholder Consultation on the
Aesthetic/Visual Resource Study Plan**

Summary of comments on draft Aesthetic/Visual Resource Study plan made at the Recreation, Land Use, Aesthetics, and Socioeconomics Workgroup meetings (2006).

Comment format	Date	Stakeholder(s)	Affiliation	Stakeholder comment	SCL response to comment
Draft RLAS Study Plans: Aesthetics/Visual Resources					
Verbal	7-26-06	J. Bodie D. Wilkins	USFS	J. Bodie commented that the USFS Forest Plan guidelines for aesthetic resources are in flux right now. She said that the Project exists in a management area that is currently 3A, which requires retention or partial retention. She said that it is a sensitive viewing area overall. D. Wilkins said that according to the current Forest Plan, everything had to fit in a certain designation but changes will include a direction toward suitability instead of standards. J. Bodie said that she didn't think SCL should say that there are "no adverse impacts and no potential significant adverse impacts from Project facilities on the aesthetic/visual resources in the Project vicinity" because the dam and transmission lines contrast with the natural landscape in some areas. She said with the upcoming changes in the Forest Plan, SCL's analysis should be consistent with new USFS guidelines and policies once they are fully defined.	SCL suggested that J. Bodie and C. Everett (EDAW) work together to make specific language changes to the study plan. It would be important for SCL's technical consultant to consult with the USFS before initiating the Aesthetics/Visual Resource Study to determine the USFS's current designations and policies. Language to this effect would be added in the study plan.
Verbal	7-26-06	G. Koehn	USFS	G. Koehn expressed concern with SCL's language regarding the study area. He said it reads as if SCL is not going to look at conditions off of SCL lands. Glenn thinks the focus should be broader than just City-owned lands.	The language was attempting to highlight the areas where there is a clear Project nexus and where SCL has the ability to implement PME measures. The language could be clarified to better characterize SCL's intent.
Verbal	7-26-06	S. Rosebrough	NPS	S. Rosebrough said that it would be	Comment acknowledged.

Comment format	Date	Stakeholder(s)	Affiliation	Stakeholder comment	SCL response to comment
				valuable to gain information on opportunities for enhancement (rather than restrict the analysis to just identifying impacts). She said she would like SCL to think forward to a map showing access with good water viewpoints, and a way to notify the public when the dam is spilling, both of which would be methods to help the public enjoy the Project resources.	
Verbal	8-15-06	J. Bodie	USFS	J. Bodie explained that under the upcoming revised USFS Forest Plan, non-natural features can be recognized as “valued landscape features.” She said that Boundary Dam could likely be considered a unique positive attribute and would not necessarily detract from the aesthetic quality of the surrounding area. She said she would appreciate SCL’s assistance in conducting a “constituent analysis.” This could be achieved by incorporating aesthetics-related questions in some of the visitor surveys. Additionally, this public input could come from written comments from visitor logs or comments from visitors on the Selkirk Loop.	Comment acknowledged.

8 CULTURAL RESOURCES

Through review of existing information, collection of additional information, and consultation with agencies, tribes, and other stakeholders, SCL has identified the need for a Cultural Resources Study to characterize historical and archaeological resources in the Project area and evaluate potential adverse effects of the Project on these resources. The proposed Cultural Resources Study is described in this section of the PSP. Completion of the study described below will ultimately support the development of a Historic Properties Management Plan for the Boundary Project.

8.1. Cultural Resources Study

Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies having the authority to license any undertaking to take into account the effect of the undertaking on historic properties. Because the relicensing of non-federal hydroelectric projects is conducted by a federal agency, the Federal Energy Regulatory Commission (FERC), the relicensing process is considered an undertaking and the NHPA and its implementing regulations are applicable. Historic properties are any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP). Archaeological sites include both prehistoric and historic-period sites 50 years of age or older. Traditional cultural properties (TCPs) are associated with the cultural practices or beliefs of a living community that are rooted in that community's history and are important in maintaining the continuing cultural identity of the community.

The Cultural Resources Study will document historic properties within the Boundary Project's Area of Potential Effect (APE), seek to identify potential TCPs within the Project APE through consultation, evaluate the NRHP eligibility of historic properties within the APE, and assess the potential effect of any Project-related impacts.

The Cultural Resources Study inventory and evaluation will utilize results from the following studies:

- Erosion Study (described in section 2.1 of this PSP)
- Dispersed Recreation Use, Access, and Condition Analysis (a component of the Recreation Resources Study; see section 6.1)
- Assessment of Factors Affecting Aquatic Productivity in Tributary Habitats (see section 4.8)
- Bat Surveys and Cave Mapping (see section 5.6)

Data from these studies applicable to historic properties will be incorporated into this study.

8.1.1. Nexus between Project Operations and Effects on Resources

Impacts to historic properties typically result from activities that occur in the vicinity of the resource. Buried archaeological deposits could be affected by ground-disturbing or erosion activities. Adverse impacts to above-ground resources, such as historic structures (e.g., cabins

and/or mining and logging features), can result from demolition, partial removal of structural elements, the addition of new features, and changes in the surrounding historical context of a resource. Erosion of the shoreline caused by Project operation could potentially expose buried cultural resources, impair data recovery, or affect native species or natural environments that have traditional value. Project-related recreational use could also have the potential to affect cultural resources. Vandalism can occur wherever public access to sites is permitted. Acts of vandalism range from artifact collection to unauthorized excavation of cultural deposits or traditional cultural properties. Ground-disturbing activities such as road building or major improvements may result in the exposure of previously unidentified cultural deposits or may cause damage to previously recorded historic properties. Potential Project effects listed here are not intended to imply that each conceivable effect necessarily will occur or that there may not be other effects that have yet to be considered.

8.1.2. Agency Resource Management Goals

USDA Forest Service (USFS)

The USFS Colville National Forest (CNF) Land Resource and Management Plan provides direction for Cultural Resources (Forest Plan 4-37). Additionally, the CNF has a plan for cultural resources management inventories in the Forest (Kramer 2002). The Inventory Design for Heritage Resources provides a systematic method for historic properties inventory. Further, it complies with the 1997 Programmatic Agreement among the USFS, Advisory Council on Historic Preservation (ACHP), and Washington State Historic Preservation Officer (SHPO). The USFS Boundary Hydroelectric Project Existing Information Analysis for cultural resources work (USFS 2000) indicates that the resource inventory for the Project is incomplete, and that Project operation could be causing shoreline erosion, which could expose any artifacts that could be present and necessitate archaeological monitoring and/or protection measures. The USFS has recommended that a plan for archaeological inventory of the Project fluctuation zone and the APE be developed, and that it include a method to gather information on the Kalispel Tribe's traditional use concerns.

U.S. Bureau of Land Management (BLM)

The BLM inventories, evaluates, and manages historic properties according to the standards described in 36 CFR 800. Inventory and management efforts are documented within the BLM's Northeast Lands Data Project (NELDP).

8.1.3. Study Goals and Objectives

The goal of the Cultural Resources Study is to gather information that will be used to develop a Historic Properties Management Plan (HPMP) with recommended protection, mitigation, and enhancement measures to reduce impacts to historic properties under the new Project license. The objectives of the study include the following:

- A field inventory to identify historic properties within the Project APE
- Consultation with tribal representatives to document any TCPs and other significant locations within the APE

- Evaluation of resources to determine whether they meet criteria for NRHP eligibility
- Documentation of any Project-related effects on NRHP-eligible historic properties

The Cultural Resources Study will be conducted in consultation with the SHPO, Indian tribes, and federal agencies. Toward this end, SCL has contacted the following parties with regard to planning the Cultural Resources Study: the USFS Colville National Forest, the Bureau of Land Management (BLM), the Kalispel Tribe of Indians, the Confederated Tribes of the Colville Reservation, the Kootenai Tribe of Idaho, the Spokane Tribe of Indians, the Coeur D'Alene Indian Tribe, the Confederated Salish and Kootenai Tribe, and the Washington State Department of Archaeology and Historic Preservation (WDAHP).

8.1.4. Need for Study

Summary of Existing Information

Cultural Background

The lower Pend Oreille River valley is characterized by the Pend Oreille River channel, located within montane forests of the Selkirk Mountains, in the northeastern corner of Washington State. Warm summers with light precipitation and cool winter temperatures with heavy snow accumulations characterize the historical climate. Vegetation includes Douglas fir, ponderosa pine, and aspen forests. Topographical relief of the terrain in the Project vicinity sharply increases north (downstream) of the flat bench above the confluence of the Pend Oreille River and Sullivan Creek, at Metaline Falls. South of the falls, broad forested riverine terraces bound both sides of the river; north of the falls, the river flows through a deeply incised, steep-walled canyon for most of its run to Z Canyon and present-day Boundary Dam.

The Boundary Project area, in the lower Pend Oreille River valley, lies within the traditional territory of the Lower Kalispel Indians, which is in turn within the larger Plateau region of traditional tribal lands in North America. Lower Kalispel people shared many broadly defined traditions with inland Salish people, including lacustrine or riverine settlement patterns; seasonal travel for subsistence procurement; subsistence emphasis on fish (including salmon), land game, and a wide variety of vegetable foods; and household and village communities linked by family and exchange relations (Hudson et al. 1981; Lahren 1998; Mourning Dove 1990; Smith 2000).

Kalispel people regularly interacted with regional groups, notably during the annual salmon fishery and trade gathering at Kettle Falls on the Columbia River (Ackerman 1996; Anastasio 1972; Lahren 1998; Mourning Dove 1990). Colville Indians at Kettle Falls managed this regional fishery, which attracted Lakes, Okanagan, Sanpoil, Spokane, Coeur d'Alene, Nespelem, Methow, Chelan, and Kalispel people. At the beginning of the nineteenth century, Lewis and Clark estimated the Kalispel population to number approximately 1,600 persons, residing in 30 lodges or houses (Moulton 1990). At least a dozen Kalispel winter village sites were used. Lower Kalispel winter villages were located between Newport in the south and Jared in the north (Fandrich et al. 2000; Ray 1936; Smith 1961). Many locations were utilized for seasonal summer or temporary camps that supported hunting and collecting activities; these included locations along rivers and major streams, as well as wetlands, feeder streams, and lake shores (Fandrich et al. 2000; Smith 1961, 2000). No winter village sites are known along the Pend

Oreille River north of Jared; however, fishing camps, gathering locations, and mineral pigment and vision quest areas were located throughout this area. People traveled into this area for huckleberries, pinenuts, serviceberries, caribou, deer, western red cedar bark, and medicinal juniper and other roots. Sweatlodges were built in lower meadows and cairns in the mountains. East of the Pend Oreille River, at Sullivan Lake, whitefish weirs were built along feeder streams, and red pigment was collected in areas around Metaline Falls (Fandrich et al. 2000; Smith 1961, 2000).

Specialized fishing was conducted in the Pend Oreille River and nearby streams, and employed nets, traps, sweeps, weirs, hook and line, and wood and stone traps. The Pend Oreille River did not support the large anadromous fish runs found along the Columbia River. Salmon were usually obtained at seasonal fisheries at the lower Clark Fork River, the lower Salmo River, and the Little Spokane River, and most significantly at Kettle Falls. While salmon was utilized, most fishing within Lower Kalispel territory was concentrated on trout, whitefish, and other inland freshwater varieties (Lahren 1998; Lyons 2003). Camas provided a vegetable staple and was collected from large fields around present day Usk and Cusick in June and July. Women usually collected the bulk of the camas harvest while men and boys hunted in surrounding hills. Camas bulbs would be steamed in rock-lined earth ovens over several days, then ground with stone mortars into flour, baked with pine moss into cakes, and eaten or stored in bags for winter (Fahey 1986; Gough 1997; Smith 2000; Thoms 1989). Following the camas harvest, people separated into family bands or small groups for fishing and collecting tasks. Travel to salmon fisheries might also occur following the camas harvest and again in September; hunting efforts were intensified in the weeks prior to the first snows in the autumn, but some hunting would be pursued through the winter. In the eighteenth century, the adoption of horses increased the speed and distance traveled by Lower Kalispel people and enabled a greater degree of interaction in the western Plains buffalo hunts (Lahren 1998; Smith 2000).

The first recorded Euro-American traveler in Lower Kalispel territory was Canadian fur trader David Thompson in 1809. Thompson was a partner in the British North West Company, and sought new fur-trade territory for the company. In 1809 and 1810, Thompson traveled and mapped the area from Lake Pend Oreille northward along the Pend Oreille River with two companions in search of a water route to meet the Columbia River. By the early 1840s, Protestant clerics had moved outward from the trading posts and forts to establish a missionary presence among Indian people in the region. In 1844, Jesuit priests organized construction of the St. Ignatius mission near the large Kalispel village at present-day Cusick (Fahey 1986). In 1834, passage by Congress of the Indian Trade and Intercourse Act instituted guidelines for the negotiation of treaties and the reservation system. In the 1850s, miners migrated from Columbia River gold fields into the Pend Oreille country to work newly identified gold deposits (Bamonte and Bamonte 1996). Chinese who had originally journeyed from the California gold fields were among these, and moved to wash placer deposits on gravel bars along the lower Pend Oreille River and Sullivan Creek, most notably at Chinamen's Bar, located on the east bank of the Pend Oreille River about 2 miles north of Metaline Falls (Barker n.d.b.; Gaylord n.d.). As late as the 1940s, rocks, an "old log cabin, with a stone fireplace", and a pile of boulders in a "horseshoe shape" remained visible at Chinamen's Bar (Barker n.d.b). Chinese miners would typically work claims abandoned by non-Chinese, and use pans, rockers, and hydraulic systems in sandbars and shorelines for placer gold.

As early as 1873, hard-rock miners traveled into the Metaline region, and claims to mine lead and zinc ore deposits were recorded along both sides of the Pend Oreille River (General Land Office 1912). Metaline itself was so named because of the extensive and sizable quantities of metal ore that attracted miners (Bamonte 1988). The identified placer and vein ore gold deposits in the Metaline area were nearly depleted by 1880, and most gold miners abandoned their diggings for newly reported gold deposits in the Idaho panhandle.

Although permanent settlement was sparse in the region through the mid-1880s, Kalispel people continued to be impacted indirectly by the consequences of white settlement. The Upper Kalispel people had largely moved to a reservation in Montana; Lower Kalispel people refused to be relocated but were forced to accommodate the entry of miners and homesteaders. From the late nineteenth century to 1914, non-treaty Lower Kalispel people witnessed greater numbers of settlers moving into their territory. In 1914, the Kalispel Reservation near Usk was established by U.S. Executive Order for the Lower Kalispel, and in 1939 the Kalispel Indian Community was chartered (Ruby and Brown 1992).

Until the late nineteenth century, steam-driven ferries provided the only large-scale reliable transportation for freight between the Project area and communities upstream along the Pend Oreille River. The growth of the towns of Metaline, Metaline Falls, and Ione grew from the increased scale of lead, zinc, and limestone mining and establishment of a cement industry, supported by completion of the Idaho and Washington Northern Railroad in 1910. Dozens of individual and corporate claims were recorded along the lower Pend Oreille River by the 1930s. Mills produced smelted materials during the First World War, and by the 1930s, following reorganizations a decade earlier, the Pend Oreille Mines and Metals Company operated some of the most productive zinc and lead mines and mills in Washington State. The federal government provided local economic stimulation through the Civilian Conservation Corps (CCC) and Rural Electrification Administration (REA) programs. CCC workers built the original ranger station and airstrip at Sullivan Lake, and other improvements. The REA provided for local loans for development of electrical supply infrastructure across the United States; the cedar pole lumber industry in the Pend Oreille valley supplied poles for electric and telecommunications systems built across the country. During the Second World War, soldiers were deployed to work in lead and zinc mines to produce ores for the war effort. Studies of the potential for hydropower development in the Z Canyon area, just upstream of the current Boundary Dam, were first proposed in 1914. However, administrative planning for the facility did not begin in earnest until the 1950s. The Project was federally licensed in 1961, and Boundary Dam was completed and began operation in 1967.

Cultural Resource Surveys

Numerous small-scale field surveys have occurred within several miles of the Boundary Project, generally for USFS or BLM compliance with the NHPA as related to timber sales, land exchanges, or similar projects (USFS 2000). Cultural resource surveys that have been conducted within or immediately adjacent to the Project APE are listed in Table 8.1-1. While overarching cultural resources overview documents provided context and assessment criteria for these projects (e.g., Hudson et al. 1981; Kramer 2002), field investigations were largely limited to

surveys conducted by foresters with archaeological survey training rather than by professional archaeologists.

Table 8.1-1. Previous cultural resource surveys conducted within or immediately adjacent to the Project APE.

Year	Report Name	Author	Resources Identified
1962	Archaeological Research in the Boundary Dam Reservoir Area	Richard Daugherty	None
1981	Cultural Resources Evaluation of the Boundary Dam Project	Brantley Jackson	None
1982	Letter Report Regarding Five Proposed Rubble Disposal Areas near Boundary Dam	Gail Thompson	None
1983	Cultural Resources Surveys of Two Locations in the Seattle City Light Department's Boundary Hydroelectric Project, Pend Oreille County, Washington	Craig Holstine	None
1983	Boundary Dam Access Road, Seattle City Light, Cultural Resource Reconnaissance	Jill Osborn	None
1999	Pend Oreille Mine Cultural Resources Overview and Historic Structure Inventory, Metaline Falls	Michael Madson and Lynn Larson	24 historic mining-related properties inventoried
2001	A Cultural Resources Survey for the Washington State Department of Transportation's SR 31: Metaline Falls to the International Border Safety Improvement Project	Dana Komen	Metaline Falls bridge identified as historic property; bridge was unevaluated, but recommended as ineligible for NRHP
2004	Archaeological Survey in Northeast Washington: the Northeast Lands Data Project in Ferry, Stevens, and Pend Oreille Counties.	Daryl E. Ferguson and Matthew J. Root	Recorded 12 previously undocumented sites (as well as a revisit to one previously recorded site) and 34 isolates.
Undetermined ¹	Colville National Forest survey	Undetermined	Undetermined
Undetermined ¹	Colville National Forest survey	Undetermined	Undetermined

¹ Additional information regarding these surveys is pending from CNF.

Archaeological investigations conducted in or adjacent to the Boundary Project have been limited in number. Two past surveys (Daugherty 1962; Jackson 1981) were designed as reservoir-wide historic property identification efforts. Neither of these efforts identified any pre-contact archaeological sites or potential historic properties within their respective survey areas.

In 1962, prior to construction of Boundary Dam, four archaeologists conducted “surface examination of those portions of the land which eventually will lie beneath the backwater pool. Any portion of this land upon which habitation could have been feasible was designated for subsequent intensive inspection” (Daugherty 1962). Following surface examination, “each of

these so-designated localities was examined by test trenches in appropriate spots.”

Archaeologists also inspected all nearby road cuts and erosion surfaces of the Pend Oreille River and its tributaries. Locations that received particular attention included both sides of the river approximately 1 mile north of Metaline Falls; the mouth of Slate Creek; the east bank of the river midway between Slate Creek and Pewee Creek; the mouth of Pewee Creek; and several places where the river had eroded small caves into the limestone cliff face.

In 1979, Boundary Reservoir was drawn down to permit inspection of the dam and pre-impoundment reservoir, and a one-day archaeological reconnaissance of about 5 miles of the reservoir was conducted (Jackson 1981). The reconnaissance examined the relatively level areas, including those around Boundary Dam and the mouth of Pewee Creek, upstream to Slate Creek.

In addition to the two reservoir-wide surveys, two limited surveys on CNF lands, and a recent cultural resources survey of portions of BLM lands in Pend Oreille County, a small number of localized surveys have been conducted within or very near to Boundary Reservoir. These were limited to small tracts within or immediately adjacent to the Project boundary to address individual, project-specific cultural resources management requirements (e.g., Holstine 1983; Komen 2001, 2002; Madson and Larson 1999; Osborn 1983; Science Applications International Corporation 1999; Thompson 1982).

Historical and Ethnographic Studies

Historical studies have been conducted on the development of towns, such as Metaline and Metaline Falls, and the local mining industries (e.g., Bamonte 1988; Barker n.d.a). Such studies have typically been produced in conjunction with local historical societies and have incorporated description of primary sources and interviews.

Ethnographic information on traditional use of the Project area by Native Americans was recorded in the middle part of the twentieth century by Smith (2000), based on his discussions with Kalispel Indian consultants. Fandrich et al. (2000) and others have based subsequent studies largely on Smith’s documentation.

Known Cultural Resources

According to WDAHP records, 61 archaeological or historic-period sites are recorded within the Boundary Project vicinity (defined for the purposes of cultural resources as the Project area and land within approximately 1 mile of the Project); only three appear to be located within or directly adjacent to the Project APE (Table 8-2). In 2002 and 2003, cultural resources survey conducted on portions of BLM lands in Pend Oreille County resulted in identification of 10 additional, previously undocumented sites and 34 archaeological isolates, all of these located within about 1 mile of the Project APE (Ferguson and Root 2004).

Most of these properties date to the early historic settlement, logging, and mining period, and include mining cabins, log flumes, logging skid roads, and homesteads. Numerous historic structures related to settlement and the growth of the mining industry are recorded in Metaline and Metaline Falls, and include Metaline Falls’ Lewis Larsen House and the Washington Hotel,

both listed on the NRHP. These and other NRHP-listed properties in the vicinity of the Boundary Project are listed in Table 8-3. Evidence of the development of the general region by public land management agencies is also present (e.g., CNF recreation sites and trails).

Table 8.1-2. Documented historic properties within about 1 mile of the proposed Project APE.

Site No.	Site Type, Brief Description	Ownership	NRHP Eligibility
45PO81H	Historic Cabin, Historic Mining Property	Colville National Forest	Unevaluated
45PO82H	Historic Cabin	Colville National Forest	Unevaluated
45PO83H	Historic Cabin	Colville National Forest	Unevaluated
45PO87H	Historic Cabin (Lucky Strike Mine)	Colville National Forest	Unevaluated
45PO88H	Historic Cabin	Colville National Forest	Unevaluated
45PO98	Historic Mining Property (1 prospecting pit)	Not known	Unevaluated
45PO99	Historic Mining Properties (11 prospecting pits)	Not known	Unevaluated
45PO121H	Historic Cabin	Not known	Unevaluated
45PO122H	Historic Maritime Property (log/cable river landing)	BLM	Unevaluated
45PO124H	Historic District (Town of Metaline)	Public and Private	Unevaluated
45PO125H	Historic Commercial Structure (Washington Hotel)	Private	Listed NRHP 1979
45PO126H	Historic Residential Structure (Lewis P. Larson House)	Private	Listed NRHP 1979
45PO131H	Historic Mining Property (Lead King Mine)	Private w/in Colville National Forest	Unevaluated
45PO132H	Historic Railroad Property (Idaho and Washington Northern Railroad Bridge)	Private	Listed NRHP 1982; HAER/WA State Bridge Inventory 1979
45PO199H	Historic Cabin, Historic Mining Properties (cabin and associated adit and tailings pile)	BLM	Unevaluated
45PO449	Historic Cabin	Private or BLM (undetermined)	Unevaluated
45PO450	Historic cabins (2)	Private w/in Colville National Forest	Unevaluated
45PO466	Historic Bridge (Penstock Bridge)	BLM	Unevaluated

Table 8.1-2, continued...

Site No.	Site Type, Brief Description	Ownership	NRHP Eligibility
45PO469	Historic Mining Properties (shaft and pits)	Not known	Unevaluated
45PO470	Historic Hydroelectric (Box Canyon Dam)	Private	Unevaluated
45PO488	Pre Contact Lithic Scatter (FCR)	Colville National Forest	Unevaluated
45PO489	Pre Contact Lithic Scatter (FCR, corner-notched projectile point)	Colville National Forest	Unevaluated
45PO500	Historic Burial	Private w/in Colville National Forest	Unevaluated
45PO519	Historic Mining Property (Frisco Lode Mill Site/collapsed ore mill structures)	BLM	Unevaluated
45PO520	Historic Mining Property (Josephine Mine)	BLM	Unevaluated
FS5101-1 (temp.); recorded as FS1021 at DAHP)	Historic Mining Property (“Chinaman’s Ditch”; earthen ditch and wooden flume segments)	Colville National Forest	Unevaluated
FS5201-3 (temp.) & CNF687 (recorded as FS1033 at DAHP)	Historic Mining Property (Wolf Quarry adit)	Colville National Forest	Unevaluated
FS5201-7 (temp.) & CNF690 (recorded as FS1030 at DAHP)	Historic Cemetery (International Order of Odd Fellows cemetery)	Colville National Forest	Unevaluated
FS5201-8 (temp.) & CNF691 (recorded as FS1031 at DAHP)	Historic Homestead (Maggie Young Homestead)	Colville National Forest	Unevaluated
CNF808 (recorded as FS1167 at DAHP)	Historic Mining Property (Box Canyon Mine Site; cabin, pits)	Colville National Forest	Unevaluated
CNF1098	Historic Agricultural Features (three spring boxes)	Colville National Forest	Unevaluated
CNF1211	Historic Logging Property (Horse Skid Trail)	Colville National Forest	Unevaluated
NNR#76	Historic Trash Scatter (“tin dump”)	Colville National Forest	Unevaluated (recommended not significant by CNF)
(none)	Historic School (Metaline Falls School)	Private	Listed NRHP 1988
(none)	Historic Commercial Property (Inland Portland Cement Plant)	Private	NAER Inventory 1982
(none)	Historic Commercial Structure (Pend Oreille Mines and Metals Building)	Private	Listed NRHP 1997

Table 8.1-2, continued...

Site No.	Site Type, Brief Description	Ownership	NRHP Eligibility
(none)	Historic Bridge (Metaline Falls Bridge)	State of Washington	Unevaluated
Cominco Property (includes 24 inventoried properties)	24 historic mining properties inventoried at Cominco American, Inc. in 1999; surveyor indicated these properties may constitute a historic mining district	Private	Unevaluated

Table 8.1-3. Summary of NRHP-listed properties in the Boundary Project vicinity.

Resource Name	City	Listed
Idaho and Washington Northern Railroad Bridge	Ione/Box Canyon Dam	1982-07-16
Larson, Lewis P., House	Metaline Falls	1979-03-26
Metaline Falls School	Metaline Falls	1988-09-08
Pend Oreille Mines and Metals Building	Metaline Falls	1997-08-29
Washington Hotel	Metaline Falls	1979-03-26

Traditional Cultural Properties

No specific locations within the Project vicinity have been identified as TCPs, and no ethnographic inventory of the vicinity exists. No winter village sites are known along the Pend Oreille River in this vicinity; however, some uses of the area by Kalispel people have been recorded. East of the Pend Oreille River, at Sullivan Lake, whitefish weirs were built along feeder streams, and red pigment was collected in areas around Metaline Falls (Fandrich et al. 2000; Smith 1961, 2000). The Kalispel Natural Resources Department, of the Kalispel Tribe of Indians, is developing a TCP database. Project-area information from this database is expected to be available in 2007 to support the Cultural Resources Study.

Need for Additional Information

Existing inventories of historic properties within the Boundary Project are limited in scope and/or are outdated. Previous surveys do not appear to have entailed 100 percent coverage of the Project area. Even in the areas systematically surveyed, some sites could be buried beneath sediment or vegetation cover with little or no trace on the ground surface, and therefore have remained undetected in previous surveys. An archaeological and historic-era field inventory, as proposed in this study plan, is needed to identify historic properties within the Project APE.

TCPs have not been identified in the Project vicinity. A literature review has not identified TCPs in the Project APE; however an additional effort is necessary to identify any culturally significant places. Potential TCPs will be identified in consultation with cultural resource specialists from affected Indian tribes, who could ascertain potential adverse impacts. Archival

research and consultation with the local historical society will be conducted to identify potential TCPs of other ethnic or cultural groups.

An important part of the Boundary Project relicensing effort will be to determine whether archaeological and historic-era sites identified within the APE are eligible for inclusion in the NRHP. All historic properties in the Project APE will require evaluation for significance. As part of the formal evaluation, consultation will occur with the SHPO, appropriate federal land-managing agencies, and affected tribes to seek recommendations on the evaluation. Potential and/or cumulative impacts of the Boundary Project upon historic properties within the Project APE have not yet been identified. Determination of any Project effects to NRHP-eligible properties within the Project APE will be conducted in consultation with the SHPO, tribes and federal agencies.

8.1.5. Detailed Description of Study

Study Area

A project's APE is defined as "the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historical resources if any such cultural resources exist" (36 CFR 800.16). For the purposes of the relicensing analysis, the Project APE is defined as follows:

- Downstream of Metaline Falls: The reservoir and the land within the FERC Project boundary, which includes most Project facilities, the land 200 horizontal (i.e., along the ground surface) feet inland of the high water elevation (1,990 feet NGVD 29 [1,994 feet NAVD 88]) along both shorelines, and the transmission line right-of-way (ROW) from the powerhouse to the Bonneville Power Administration interconnection.
- Upstream of Metaline Falls: The reservoir and the land within the FERC Project boundary, and the land within 25 horizontal feet inland of the high water elevation along both shorelines (approximately 2,015 feet NGVD 29 [2,019 feet NAVD 88]), extending south to the FERC project boundary for the Box Canyon Project.^{1 2}
- The SCL-owned Boundary Wildlife Preserve (155 acres) and adjoining SCL-owned property (85 acres).

¹ The USFS Colville National Forest study request for cultural resources (USFS 2006) states that the Boundary Project APE should be the Project boundary. SCL agrees that the FERC project boundary is an appropriate basis for the Project APE. However, because the FERC project boundary above Metaline Falls is set at the ordinary high water line, SCL has extended the Project APE for this area by 25 horizontal feet inland. SCL believes the additional 25 feet from the ordinary high water line captures the area in which any potential Project effects would reasonably be expected to occur.

² The estimated high water elevation of 2,015 feet upstream of Metaline Falls is based on the review of existing hydrology, as described in section 1.3.5 of this PSP (see Table 1.3-1). Following completion of the Hydrology Dataset and Statistics in January 2007 (see section 1.4.2), SCL will review and refine, as necessary, this elevation range.

- Major Project-related roads: The SCL ROW for the road from Boundary Dam to the Vista House and the road from the dam to County Road No. 2975. The Pend Oreille County ROW for the road from the Vista House to State Highway 31.
- All SCL-owned lands outside the FERC Project boundary, in the Pend Oreille valley between Box Canyon Dam and the international border, including lands where there are Project-related structures or activities, such as maintenance and equipment staging locations.
- In addition, the APE would be adjusted to include any areas where other resource studies (e.g., erosion, dispersed recreation) identify a Project effect in an area not within the original APE.³

The ability to conduct field surveys on private lands within the APE outside of the FERC Project boundary (mainly upstream of Metaline Falls) may be limited due to access constraints in these areas.

Proposed Methodology

Task 1 – Archival Research

A Cultural Resources Overview for the Project area, completed in 2006 as part of SCL's early information development effort, provides background information and evaluative context for assessing NRHP eligibility of sites within the Project APE. Additional research of known historic-era sites will be conducted prior to the field inventory in order to provide site-specific data to be utilized for field documentation.

The Cultural Resources Overview also includes a predictive model for archaeological sites. The predictive model was developed using empirical environmental data, supplemented with additional information from previous archaeological investigations in the Pend Oreille River valley and with locational information derived from ethnohistorical literature and geomorphology (study of landform development processes) pertaining to the Pend Oreille River valley. The result is a GIS-based map that describes zones as having high, moderate, or low potential to contain archaeological sites. The locations and kinds of sites cannot be anticipated by a model in all instances; however, the underlying assumption of the model is that most archaeological occurrences are associated with sets of environmental and cultural variables. Development of the predictive model also included a limited, multi-day field reconnaissance for model verification, primarily field-checking some high probability areas for the presence of archaeological materials in the summer of 2006. The information from the predictive model is intended to provide explanatory information to supplement archival research and field inventory efforts and will also be used to develop a culture history context to support evaluation of resources.

³ The USFS study request for cultural resources (USFS 2006) states that the Boundary Project APE should be the Project boundary, but must also include any historic properties that begin or originate within the Project boundary. SCL agrees that the FERC project boundary is an appropriate basis for the Project APE. SCL's APE definition can accommodate expansion of the APE to include any historic properties (beginning or terminating within the Project boundary) that extend beyond the original APE, if a Project effect is identified in those areas where the historic properties are located.

Task 2 – Field Inventory

The Technical Consultant that conducts the Cultural Resources Study will be responsible for obtaining BLM and USFS Archaeological Resources Protection Act (ARPA) permits, as well as any special permits to conduct the field survey. Before the survey, the Technical Consultant will review the archaeological sensitivity map depicting high, medium, and low probability areas within the APE for containing archaeological resources produced by the predictive model. The field survey will be intensive and will be consistent with the most recent survey standards supported by the BLM and the USFS, Indian tribes, and WDAHP. Tribal representatives will be informed of the fieldwork schedule and invited to participate in or observe the work. SCL will develop a methodology for contacting landowners to request permission to access private property within the Project APE prior to conducting the field inventory.

Prior to initiating the field inventory, the Technical Consultant will conduct a reconnaissance visit to the Project to become oriented to the range of potential site locations and Project area conditions and environment. The Cultural Resources Workgroup will be invited to participate in this pre-inventory orientation and reconnaissance. Following the orientation/reconnaissance, the Technical Consultant will refine the inventory methodology, as needed, to accommodate the range of landforms within the Project APE, including identification of locations for subsurface investigations and minimum spacing intervals for subsurface excavations. The physical geography of the Boundary Project produces two distinct zones for cultural resources investigations. Upstream of Metaline Falls, the river approximates its pre-dam configuration. The river gradient is moderate, and alluvial fans and terraces are evident. Below the falls, the pre-dam river was incised into a deep, steep-sided gorge. There, the original riverside environments are now deeply submerged by as much as 300 feet of water. Archaeological sensitivity mapping for prehistoric sites produced by the Cultural Resources Overview predictive model suggests that the Project APE downstream from Metaline Falls has a low potential to contain cultural resource sites; however, the part of the Project upstream of the falls has greater potential for prehistoric archaeology. Conversely, the area downstream of the falls contains extensive mineral deposits that were mined in the historic era. Thus, there is greater potential for evidence of these activities downstream from the falls.

The kinds of prehistoric sites that might be expected above the falls include residential sites (camps and/or villages) and task/resource specific sites (fishing/hunting/etc.). Below the falls, residential sites generally would not be expected on the steep, rugged terrain; however, diffuse archaeological deposits representing task/resource-specific activities might be identified. Historic-era sites above the falls could include properties associated with settlement, agriculture, mining, or transportation. Sites downstream are expected to be associated with mining or other dispersed resource procurement (e.g., trapping).

The field inventory will include determination of site boundaries, stratigraphy of archaeological sites, assessment of site integrity, and initial identification of site significance for those sites within the Project APE. Fieldwork along the perimeter of the Project reservoir will be scheduled during periods when the fluctuation zone can be examined for exposed archaeological materials. A generalized methodology is presented below.

Identification Methodology

Pedestrian transects will be regularly spaced at no greater than 25-meter intervals across 100 percent of accessible terrain within the Project APE. Areas not surveyed due to excessively steep terrain and/or for safety reasons or due to access constraints from private landowners will be documented. In areas of sediment accumulation, such as along the reservoir, streams or confluences, fieldwork may require excavating shovel and/or auger probes to examine subsurface deposits. In addition, the field crew will systematically examine all horizontally and vertically exposed sediment surfaces (i.e., cutbanks) for archaeological materials. The examination of these exposures will also aid in determining horizontal and vertical boundaries of sites.

In non-riverine upland environments, shovels or trowels may be used to clear areas of forest duff to examine the mineral soil for evidence of artifacts, petroglyphs and pictographs, features, soil discoloration, and other potential anthropogenic characteristics.

Shovel testing, when necessary, will be performed in a standardized manner and will be used to delineate site boundaries (e.g., vertical and horizontal extent), determine the presence/absence of subsurface cultural material, and determine the degree and types of material. Probes would be systematically located along transects or could be excavated in other regular patterns in areas that may contain cultural deposits. Specific locations for probes and the numbers of probes to be excavated will be determined by supervisory field archaeologists. Test probe excavations will measure approximately 40–50 centimeters in diameter, if round, or approximately 50-by-50 centimeters square, as permitted by the character of the local soils. Unless natural stratigraphic units are identified, probes will be excavated in approximately 10-centimeter arbitrary levels and will be excavated to bedrock, or until culturally sterile deposits or the point of diminishing return (two consecutive archaeologically sterile levels) is reached. All sediments will be screened through 0.25-inch mesh hardware cloth. If buried cultural features are found (e.g., trash pits, hearths, buried living surface), the test probes will be terminated at the feature and the site recommended for additional, formal archaeological testing. In any case, shovel probing will not be intensive, and probes will be located so as to generate maximum data regarding site potentials with a minimum of ground disturbance.

The identification methodology will include inventory of above-ground historic era structures within the Project APE. When encountering a historic-era site, standard site recording procedures will be undertaken. The site area will be systematically examined to identify and record any structural remains and other evidence of human use and/or occupation, including:

- Method of construction, size, room sizes, number of stories, roof design, roofing materials, and types of construction materials
- Trash dumps or surface scatter of artifacts
- Depressions left from structures such as privies or root cellars
- Roads or trails
- Evidence of water procurement (ditches, pipes, wells, springboxes)

- Landscape and vegetation (lilac bushes, bulb flowers, fruit trees or bushes, created meadows)

Placement of archaeological test units at historic-era sites will be most successful if located in areas where the heaviest concentration of human use/occupation may have occurred. The interiors of living structures, the exteriors of structures near doors or windows, suspected trash dumps, or root cellars would be likely areas to explore.

Inadvertent Discovery of Human Remains

In the event of the inadvertent discovery of human remains, work will be immediately halted in the discovery area, the remains covered and secured, and communication established with field crew supervisory personnel, SCL, local law enforcement, WDAHP, and authorized tribal representatives. Any exposed human remains will be discretely covered and treated with appropriate respect until tribal, state, and other officials (and any involved federal agency) have determined and agreed upon a course of action for removal, reburial, or other treatment. There will be no photographs or any analysis (including bone assays) conducted on human remains without the explicit concurrence of tribes and the SHPO.

Data Analysis

A general non-collection strategy shall be employed with regard to identified artifacts; however, documentation of artifact distribution and types will be necessary. Diagnostic artifacts shall be analyzed in the field. Materials will be collected during the inventory only when they could be subject to irretrievable loss or unauthorized collection, with the exception of scientific samples described below. The provenience of all collected materials will be recorded using maps and either a global positioning system (GPS) receiver or with measured reference to a known fixed datum.

Any materials collected in the field will be analyzed to generate data to address NRHP-eligibility. Description and analysis will be conducted as appropriate to the research goals of the Cultural Resources Study. Once information regarding provenience, function, and chronology has been entered into computer databases, the artifacts will be catalogued, photographed as appropriate, and curated at a facility that complies with the Secretary of the Interior's Guidelines, 36CRF Part 79, "Curation of Federally-Owned and Administered Archaeological Collections; Final Rule," Federal Register, September 12, 1990.

If radiocarbon or tephra from geological or cultural features in cutbanks or other contexts are identified during inventory, samples will be obtained for chronometry and/or sourcing. Obsidian artifacts may be collected for source analysis, and quartzite knives may be collected for DNA analysis.

Task 3 – Traditional Cultural Property Identification

The identification of potential TCPs involves tribal consultation and will take into consideration National Register Bulletin No. 38, Guidelines for Evaluating and Documenting Traditional Cultural Properties (Parker and King 1995). The Cultural Resources Study anticipates that the

tribes will provide any information on potential TCPs that may be needed as part of consultation for the Project. If tribes do not wish to disclose the locations of potential TCPs due to religious or other confidentiality concerns, SCL will instead work with the tribes to identify the general issues and concerns that the tribes may have regarding potential impacts of the Project upon resources known to the tribes, and work to develop agreeable measures to alleviate these concerns. Archival research and consultation will also be conducted with the local historical societies to identify potential TCPs of other ethnic or cultural groups

Task 4 – National Register of Historic Places Eligibility Evaluation

NRHP evaluations will be site specific. NRHP eligibility criteria will be applied to assess the archaeological and historic-era properties identified within the Project APE in order to develop NRHP determinations of eligibility to be presented to the SHPO for concurrence. Eligibility criteria are codified in 36 CFR 60.4:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and:

- a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
- b) that are associated with the lives of persons significant in our past; or
- c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- d) that have yielded, or may be likely to yield, information important in prehistory or history.

In addition to the criteria described in 36 CFR 60.4, properties of traditional religious and cultural importance to a community (i.e., TCPs) may be determined eligible for inclusion in the NRHP because of their “association with cultural practices or beliefs of a living community that are (a) rooted in that community’s history, and (b) are important in maintaining the continuing cultural identity of the community.”

Whenever feasible, NRHP assessment of archaeological sites will be accomplished without ground-disturbing archaeological test excavation. Initial assessment of NRHP eligibility will hinge on two data sets: site integrity and site contents as indicated by surface observations and testing. Field observations may produce sufficient information to determine site significance (i.e., research potential relating to NRHP criterion (d)). NRHP assessment of archaeological sites will include the application of questions such as the following:

- Does the archaeological record indicate changes through time in types of resources used?
- Does the archaeological record reflect use of locally available raw material sources?

- What is the range of materials present? Could these materials have been obtained from the same local (i.e., immediately available) source?
- What local (i.e., immediately available) plant and/or animal resources might have been exploited by people?
- What chronological evidence is present? Are typologically identifiable artifacts and/or datable organic materials present?
- What processing and manufacturing techniques can be distinguished from the archaeological record, and are these time-sensitive?
- Are buried cultural components present?

For historical-era sites, it cannot be assumed that an evaluation of that site's NRHP eligibility can be made solely through an assessment of the built environment. Historic sites that have few, if any, remaining above ground structures still have the potential to yield important information about history. Pre-field research into the nature of a historic-era site can provide valuable information regarding ownership, use, technology, and length of occupation.

Questions that may be applied to historic sites to address the physical structure and artifacts of these sites, but also incorporate information from the written record, include:

- Is there evidence specific to particular ethnic groups?
- What information is present that indicates relative economic status?
- What artifacts or structures are present that are related to expressions of gender?
- What evidence is present that indicates age (e.g., child/adult) of the inhabitants?
- What relationships are there between a site's utilitarian and non-utilitarian artifact assemblages?
- Is there evidence of specific socio-cultural or political movements?

Section 106 of the NHPA does not require future management of cultural resources that are not eligible for the NRHP, and thus not considered to be historic properties. Ineligible sites can be removed from any future consideration in the Historic Properties Management (HPMP). NRHP evaluations will be developed through consultation with the SHPO, tribes, federal agencies and FERC.

Task 5 – Evaluation of Project Effects on Historic Properties

Determination of potential adverse Project effects to any NRHP-eligible historic properties within the APE will be done in consultation with the SHPO, tribes and federal agencies. Effects analyses will also consider results of the Erosion Study; the Dispersed Recreation Use, Access, and Condition Analysis; the Assessment of Factors Affecting Aquatic Productivity in Tributary Habitats; and the Bat Surveys and Cave Mapping.

Task 6 –Documentation

All field inventory data will be carefully and completely documented. Complete records on all aspects of the work, including but not limited to field notes, records of features, a site plan map of all sampling units, stratigraphic records (as appropriate), artifacts, and environmental and geological observations, will be maintained. A general daily log will be kept that will record crew members and their activities, field conditions (e.g., location with GPS or fixed datum, weather, temperature and vegetation), the amount of work completed that day, description of said work, and other pertinent information such as pictures taken, artifacts collected, potential biases affecting site location and interpretation.

Once a site is identified, a Washington State Archaeological Inventory form (as well as updating site forms for all previously recorded sites) will be completed. In addition, forms to describe observed impacts and research potential of archaeological sites will be completed (see Attachment 8-1). One form records impacts to the site through surface observations, prior to any subsurface testing, and considers both natural (geomorphologic variability, erosion factors) and cultural processes (e.g., existing and/or past effects) acting on the site. The other form considers the research potential through observable features, artifact types and distributions on the site. Consistent application of these forms will provide a framework for systematic data collection.

8.1.6. Work Products

The results of the Cultural Resources Study will be compiled and presented in a written study report completed in standard scientific format. The report will include at least the following information:

- Standard Washington State Department of Archaeological and Historic Preservation Inventory Forms. All inventoried sites will be recorded on standard Washington State Archaeological Inventory Forms. Copies of completed forms will be submitted to appropriate federal land management agencies and to WDAHP for assignment of permanent Smithsonian trinomials.
- Determinations of Eligibility (DOEs). NRHP eligibility forms will be completed upon submittal of draft copies of the study products to the SHPO, tribes and federal agencies for review and comment. Federal agencies will submit DOEs to WDAHP for sites on lands managed by that agency.
- A discussion of the Cultural Resources Study methodology and the results of historic properties inventory and evaluation, including TCP investigations, assessment of potential Project effects and a consultation summary.

8.1.7. Consistency with Generally Accepted Scientific Practice

The planned study methods discussed above are consistent with survey strategies used by the USFS and BLM. These methods comply with the requirements of FERC and Section 106 of the NHPA, as amended.

8.1.8. Consultation with Agencies, Tribes, and Other Stakeholders

The Cultural Resources Study plan was prepared with input from the USFS, Kalispel Tribe of Indians, FERC, and WDAHP, which was provided at meetings of the Cultural Resources Workgroup on May 25, June 27, and August 15, 2006. Comments provided by these relicensing participants on the draft study plan are summarized in Attachment 8-2 and can also be found in the workgroup meeting summaries, which are available on SCL's relicensing website (<http://www.seattle.gov/light/news/issues/bndryRelic/>).

After draft versions of the Cultural Resources Study plan were discussed at the Cultural Resources Workgroup meetings, SCL further modified the study plan in response to comments and study requests filed with FERC by the USFS (letter dated August 31, 2006, containing the USFS's PAD/Scoping comments and official study requests; USFS 2006). Modifications included adding clarification, additional supporting rationale, and additional detail to address comments and specific components in the USFS cultural resources study request. SCL believes that the cultural resources study request received from the USFS is adequately addressed in the SCL's proposed Cultural Resources Study plan (as modified) as described in this PSP. Where differences remain between the study request and the proposed study elements, SCL has so noted at the applicable locations in the study plan.

8.1.9. Schedule

The Cultural Resources Study will be initiated in 2007 and completed in 2008 per the general schedule shown in Table 8.1-4, which will be adjusted as needed to comply with Section 106 consultation requirements. The need for additional inventory work will be evaluated in early 2008. Circumstances that could require additional 2008 fieldwork include adjustments to the Project APE to include any additional lands where Project effects are identified by other resource studies. Reports are planned for preparation at the end of 2007 and 2008. Relicensing participants will have the opportunity to review and comment on these reports. Prior to release of the reports within the Initial and Updated study reports, SCL will meet with agencies, tribes, and other stakeholders to discuss the study results, as described in section 1.2.4 of this document.

Table 8.1-4. Schedule for Cultural Resources Study.

Activity	2007				2008			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Study implementation planning, including pre-inventory orientation/ reconnaissance, refinement of field inventory methodology, establishment of field study needs and determination of final schedule	■	■						
Review of existing information (Cultural Resources Overview and Predictive Model) and Archival research	■	■						
Field inventory, data analysis, and evaluation		■	■					
Consultation on potential TCPs	■	■	■					
Prepare year-1 draft study report (first-year results)				■				
Submit draft year-1 study report for review and comment				■				
Revise and finalize year-1 study report					■			
Continue field inventory and consultation, as necessary						■	■	
Prepare draft Final study report							■	
Submit draft Final study report for review and comment								■
Revise and finalize Final study report								■

Information from the completed Cultural Resources Study will support development of the Boundary HPMP beginning in late 2008. The HPMP will summarize the cultural history of the area, provide information on resource inventory and evaluation, discuss Project impacts on eligible historic properties within the APE, and provide management measures and protocols for the period of the new license, including inventory and evaluation of Project structures when they attain 50 years of age and the assignment of cultural resources management responsibilities to an appropriate SCL staff person. The draft HPMP will be completed for submittal with the Boundary Project Preliminary License Proposal in April 2009 and the final HPMP will be completed for submittal with the License Application in September 2009.

8.1.10. Progress Reports, Information Sharing, and Technical Review

In addition to preparing the Cultural Resources Study report, as described above, there will be several opportunities for information sharing and technical review with the Cultural Resources Workgroup. As described in section 1.2.4 of this PSP, SCL plans to provide informal updates on a quarterly basis to keep relicensing participants abreast of study progress and communicate significant developments. Prior to release of the Initial and Updated study reports (which will include the results of this study), SCL will meet with agencies, tribes, and other stakeholders to discuss the study results, as described in section 1.2.4 of this document.

Washington State law provides for the protection of archaeological sites and confidentiality of site location information. Site location information that could subject cultural resources to vandalism, or that could impede the use of a traditional religious site by practitioners, is exempt

from disclosure under Section 304 of the NHPA of 1966, as amended. Reports containing any sensitive information will be marked “confidential” and shared only with cultural resource specialists from the USFS, BLM, Indian tribes, SHPO and FERC. Confidential information will be removed from documents available to the public. Access to restricted information will be provided to qualified professionals (as specified in 43 CFR 7.8[a][1]) having specific and legitimate research requirements.

8.1.11. Anticipated Level of Effort and Cost

SCL will use the guidelines of 36 CFR 800.4 to make a reasonable and good faith effort to carry out appropriate identification efforts and conduct meetings with agencies, tribes and other stakeholders. SCL will also follow other applicable professional, state, tribal, and local laws, and standards, and will respect confidentiality concerns. The estimated cost to complete the cultural resources study is approximately in the range of \$160,000 to \$190,000.

8.1.12. Literature Cited

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Attachment 8-1: Boundary Hydroelectric Project, Observed Impacts to Archaeological Sites Form

BOUNDARY HYDROELECTRIC PROJECT
Observed Impacts to Archaeological Sites Form
(Surface Observations Prior to Testing)

SITE # 45 _____

Systems Operations Impacts

Overall impacts to site

Erosion Deposition Undetermined

Are both erosion and reservoir deposition present? Yes No

If erosion is present, are lag deposits present? Yes No

If yes, with gravel sand or silt

Are artifacts present? Yes No

If yes, is there evidence for horizontal or lateral transport?

Yes No Undetermined

Is there evidence of landform retreat? Yes No

If yes, describe landform and estimate linear distance of retreat.

If deposition is present, is there a gravel sand or silt cap?

What is the depth of deposits?

Overall estimated percentage of total site area affected by systems operations impacts: _____%

Other Impacts

Construction/urbanization related

Roads Structures Clearing/grading Other (specify)

Relic collection

Surface collection Excavation

ORV use

Overall estimated percentage of total site area affected by other impacts: _____%

Describe all impacts:

**BOUNDARY HYDROELECTRIC PROJECT
Observed Archaeological Research Potential Form**

Site # 45_____

SITE FORM DATA

Site dimensions

Site description

Site condition

PRE-TESTING SURFACE OBSERVATIONS

Features

Are features observable prior to testing? Yes No
Do they appear intact? Yes No Uncertain
What is feature density? High (>5) Moderate (2-4) Low (1) None
Are activity loci present (i.e., multiple features in apparent association) Yes No

Density of surface materials (artifacts and fire-modified rock)

High Moderate Low

High = > 10 items (outside of features) within a 1 m square area anywhere on site;

Moderate = 5-10 items (outside of features) within a 1 m square area;

Low = <5 items (outside of features) within a 1 m square area

Diversity of functional artifact types

High (>5) Moderate (2-4) Low (1) None

Diversity of lithic material types

>3 2-3 1 type

Diversity of historic artifact types

>3 2-3 1 type

Presence of faunal materials

Yes No Uncertain

Potential for organic materials (includes charcoal)

Yes No Uncertain

Other factors

**Attachment 8-2: Summary of Stakeholder Comments on
Cultural Resources Study Plan**

Summary of comments on draft Cultural Resources Study plan, made at the Cultural Resources Workgroup meetings (2006).

Comment format	Date	Stakeholder	Affiliation	Stakeholder comment	SCL response to comment
Overview of Relicensing Process/ Workgroup expectations					
Verbal	5-25-06	K. Lyons	KNRD	K. Lyons asked Frank Winchell (FERC) who would be the primary signatories and who would be concurring.	Frank Winchell (FERC) responded that FERC and WSHPO would be primary signatories, and the other agencies will be concurring.
Verbal	5-25-06	S. Kramer	USFS	S. Kramer noted that USFS sent a letter to the ACHP stating the opinion that they should be a primary signatory but had not yet heard from the ACHP.	Comment acknowledged.
Verbal	5-25-06	K. Lyons	KNRD	K. Lyons asked who is responsible for license compliance post-license issuance.	Frank Winchell (FERC) responded that the Department of Hydropower Compliance Administration of FERC handles compliance separately from the Department of Hydropower Licensing.
Verbal	5-25-06	S. Kramer	USFS	S. Kramer asked if Commission staff authorizes the applicant to act as a representative of FERC to carry out the process.	Frank Winchell (FERC) responded that that is correct, but Commission is still responsible for all findings and determinations after consultation with SHPO.
Area of Potential Effect					
Verbal	6-27-06	D. Egbers	Metaline Police Commissioner	D. Egbers noted that Continental Line of London, England owns the road to Pewee Falls, which was one of the SCL-owned lands awaiting verification of use.	Comment acknowledged.
Verbal	6-27-06	D. Egbers	Metaline Police Commissioner	D. Egbers noted that there is a record in Alan Smith's notes of red ochre deposits in Metaline	SCL had not come across any references to traditional cultural uses of zinc oxide.

Comment format	Date	Stakeholder	Affiliation	Stakeholder comment	SCL response to comment
				Falls. Don passed along the approximate locations of these to Jim Schumacher (WSHS). Don asked if SCL has any records of zinc oxide in the Project area, as he has heard that it once was abundant.	The Kalispel Tribe is developing a Traditional Cultural Properties database for the area which may address this question.
Verbal	6-27-06	S. Kramer	USFS	S. Kramer said that he agrees with the current description of the APE because all affected areas will be included in the Historic Properties Management Plan (HPMP), so any areas that need future inclusion in the APE can be addressed later.	Adjustment of the APE to include any additional lands where Project effects are identified by other resources studies, such as the Shoreline Erosion and the Dispersed Recreation studies, .will hopefully occur in early 2008, as results from those studies become available.
Verbal	6-27-06	S. Kramer	USFS	S. Kramer asked that SCL clearly identify the border of the APE, for example as 200 horizontal feet above high water mark, adding that high water mark may not capture the APE. He also said that if only a portion of a linear site is included in the APE, the APE will need to extend to incorporate the entire site.	A more detailed written description of the APE should be provided. SCL is still in the process of finalizing its review of easements and property ownership information; however the GIS information for the FERC Project boundary is considered a finished product. In 2005, Seattle Public Utilities was hired to proof and translate Boundary Project FERC exhibit maps into GIS. SCL believes the best approach to any linear sites is to look at them on a case-by-case basis taking into consideration site specifics such as property ownership,

Comment format	Date	Stakeholder	Affiliation	Stakeholder comment	SCL response to comment
					National Register eligibility and potential for Project effects.
Verbal	8-15-06	F. Winchell	FERC	F. Winchell asked how SCL-owned lands still under review are included in the APE description.	The ownership and easement analysis of Project lands is still ongoing and should be completed by late October. If the analysis confirms SCL ownership and shows Project structures or activities on SCL-owned lands they will be included in the APE.
Verbal	8-15-06	F. Winchell	FERC	F. Winchell asked if SCL was intending to survey easement areas on private lands within the APE. He stressed that gaining permission to survey can be a difficult process and is one that should be started as early as possible.	The SCL easement assessment includes privately-owned lands. SCL has explored various approaches that have been used to contact private landowners for permission to access land for surveys.
Verbal	8-15-06	K. Lyons	KNRD	K. Lyons said that he believes language in flowage easements could allow SCL to inspect private lands without special permission.	SCL would put together a strategy to begin contacting landowners to ask permission to survey their land as soon as possible.
Verbal	8-15-06	S. Kramer	USFS	S. Kramer said that he was concerned about the practicality of identifying 25 horizontal inland feet upstream of Metaline Falls, which is the area to be included in the APE. Steve added that he would like to see all SCL-owned lands included in the APE, as these have the potential to have Project structures or activities initiated over the next 50 year license	SCL has very detailed aerial photographs that would help surveyors in the field identify the 25 horizontal feet upstream of Metaline Falls. SCL will consider the request to include all SCL-owned lands outside the Project boundary into the APE once ownership status has been confirmed.

Comment format	Date	Stakeholder	Affiliation	Stakeholder comment	SCL response to comment
				term.	
Verbal	8-15-06	K. Lyons	KNRD	K. Lyons noted that there is hazardous terrain downstream of Metaline Falls that may not be possible to survey.	SCL agreed and said that areas would be surveyed only if accessible and safe to access. The Cultural Resources Study Plan addresses this issue.
Verbal	8-15-06	K. Lyons	KNRD	K. Lyons asked if other resource areas were already thinking of real estate acquisition as potential PME's.	No resource areas have yet reached that point. The Boundary Wildlife Preserve and the buffer property surrounding are included in the Project APE.
Verbal	8-15-06	S. Kramer	USFS	S. Kramer commented that he was aware that Terrestrial studies go beyond the area included in the APE. He said that he does not think those areas need to be included in the APE because he does not see potential for effects on cultural resources in those extended areas.	Comment acknowledged.
Draft Cultural Resources study plan					
Verbal	5-25-06	F. Winchell	FERC	F. Winchell advised SCL to look at the HPMP's for Lake Chelan and Rocky Reach. He said that those could both be good models for procedure and methods.	Comment acknowledged.
Verbal	5-25-06	K. Lyons	KNRD	K. Lyons offered SCL the use of KNRD's reading room in Spokane, asking them to call him to make an appointment if they're interested.	Comment acknowledged.
Verbal	5-25-06	S. Kramer	USFS	S. Kramer noted that SCL should include mining, logging, homesteading and agency administration land uses as	Comment acknowledged.

Comment format	Date	Stakeholder	Affiliation	Stakeholder comment	SCL response to comment
				historical contextual themes in the Cultural Overview. S. Kramer also suggested that SCL include a discussion of rural electrification.	
Verbal	5-25-06	K. Lyons	KNRD	K. Lyons asked if a geomorphic evaluation for the Project area exists. K. Lyons said that he was concerned with seasonal littoral zones. He added that Charlie Hodges (NWAA) and Stanley Gough (AHS) have developed a landform development process which Kevin will pass along to Lisa as an example of a work product.	Dr. Howard Coombs performed a geologic study in the Project area that stops at Metaline Falls. The geomorphic evaluation would be addressed within the Shoreline Erosion study. Perhaps this could be addressed in the study of tributary mouths as well.
Verbal	5-25-06	S. Kramer	USFS	S. Kramer asked SCL to address in the nexus to Project operation section the fact that the reservoir may have changed patterns of recreation use in the Project area.	SCL will add language to the nexus section regarding the potential for recreation-related effects.
Verbal	5-25-06	K. Lyons	KNRD	K. Lyons commented that use of the full scope of easement language should facilitate accessing easement lands, without having to specifically ask for permission from property owners.	SCL will look into this issue more closely in late July 2006.
Verbal	5-25-06	S. Kramer	USFS	S. Kramer commented that he was not sure that the Project boundary equates to the APE. Steve said that the APE of this study should be the area in which operation and maintenance of the Project have the potential to affect cultural resources. Steve said that he would like to reach	SCL will find out when they would be able to provide stakeholder with more detailed maps of the proposed APE to facilitate reaching consensus on the APE.

Comment format	Date	Stakeholder	Affiliation	Stakeholder comment	SCL response to comment
				consensus on the APE before the inventory begins, to avoid repeat visits.	
Verbal	5-25-06	F. Winchell	FERC	F. Winchell reminded the group that the APE starts with the Project boundary and then looks at the potential for Project-related effects. He added that the goal is to get the inventory done within the ILP timeline.	Comment acknowledged.
Verbal	5-25-06	R. Whitlam	DAHP	R. Whitlam asked whether SCL had sent out an APE consultation letter to stakeholders.	SCL will send out APE consultation letters to stakeholders when it has received designation of Section 106 authority from FERC. In the meantime, SCL will continue to work with stakeholders on an APE definition.
Verbal	5-25-06	F. Winchell	FERC	F. Winchell responded that FERC had just received SCL's request for delegation of day-to-day Section 106 consultation authority on May 5, 2006.	Comment acknowledged.
Verbal	5-25-06	K. Lyons	KNRD	K. Lyons asked Glenn if there was disparity between the field survey methods of the BLM (Bailey 2005) and the CNF (Kramer 2002)	The differences are not significant enough to cause different out-products. The group decided to use the CNF method as the foundation for the study plan inventory methodology.
Verbal	5-25-06	S. Kramer	USFS	S. Kramer added that he will be updating his field inventory design.	Comment acknowledged.
Verbal	5-25-06	S. Kramer	USFS	S. Kramer said that he would review the language in evaluation of Project effects on historic	Comment acknowledged.

Comment format	Date	Stakeholder	Affiliation	Stakeholder comment	SCL response to comment
				properties section, adding that evaluation should include subsurface excavation of collapsed historic-era sites.	
Verbal	5-25-06	K. Lyons	KNRD	K. Lyons asked whether SCL planned to pursue proposed landform or observed artifacts and features for the site bound methodology. Kevin added that it is important to expressly point this out in methodology for the contactor who will be performing the work.	SCL plans on using observed artifacts and features.
Verbal	5-25-06	S. Kramer	USFS	S. Kramer raised the issue of artifact collection, noting that FS policy indicates no collection of diagnostic artifacts unless there is potential for those to be illegally collected.	Comment acknowledged.
Verbal	5-25-06	K. Lyons	KNRD	K. Lyons noted that the Tribe is more aggressive in collection due to high rates of illegal collection. Kevin said that he thought SCL should be collecting obsidians, projectile points with hafting element, and tabular quartzite knives for potential DNA mapping. Kevin added that it could be beneficial to limit collections to decrease the curational load as well.	SCL will expand the methodology section to provide greater detail on artifact collection.
Verbal	5-25-06	K. Lyons	KNRD	K. Lyons noted that SCL should include a standard statement addressing the discovery of human remains, suggesting: "in the event that human remains are discovered, SCL would report to	Comment acknowledged.

Comment format	Date	Stakeholder	Affiliation	Stakeholder comment	SCL response to comment
				the Sheriff, landowner, WSHPO, and Tribes. If the remains are not from a criminal act, but are Native American, the Tribe will seek repatriation.”	
Verbal	5-25-06	S. Kramer	USFS	S. Kramer added that the Tribal Relations Enhancement Act pending before Congress would dictate that if Native American remains are discovered on federal lands, they should be left in the same location.	SCL will include inadvertent discovery language in the study plan.
Verbal	5-25-06	K. Lyons	KNRD	In response to SCL asking the group if they felt it was necessary to create a confidentiality agreement for workgroup meetings to protect cultural resources, K. Lyons responded that he suggests affording fair access to qualified professionals. He added that SCL could conduct an executive issues meeting for confidential issues apart from the workgroup meeting if they had non-trained interested parties present.	Comment acknowledged.
Verbal	5-25-06	R. Whitlam	DAHP	R. Whitlam asked whether SCL had an archaeologist on staff and reminded SCL that post-license, they will need to have a cultural resources specialist on staff to handle compliance.	SCL does not have an archaeologist on staff, but would address this issue in the HPMP section of the study plan.
Verbal	6-27-06	S. Kramer	USFS	S. Kramer commented that research questions are different for historic and pre-historic sites. He requested that research questions regarding historic sites	Comment acknowledged.

Comment format	Date	Stakeholder	Affiliation	Stakeholder comment	SCL response to comment
				be more defined and include questions addressing ethnicity, economic status, gender, and age. He noted that these are critical questions for determining the significance of historic sites.	
Verbal	6-27-06	S. Kramer	USFS	S. Kramer commented on the Evaluation Form for Assessing Impacts to Archaeological Sites to be used by technicians included as an appendix in the Cultural Resources Study Plan. Steve said he thought the question regarding overall degree of impacts was subjective and he would prefer to see occurrence/non-occurrence as opposed to a degree of impact as this can lead to confusion.	Comment acknowledged.
Verbal	6-27-06	S. Kramer	USFS	S. Kramer said that he has been having problems matching up recorded cultural resource sites from the USFS and the State Historic Preservation Office (SHPO).	SCL is creating a GIS layer of all recorded sites in the Project area and will send those maps to Steve when they are complete.
Verbal	6-27-06	D. Egbers	Metaline Police Commissioner	D. Egbers suggested additional references for information on mining properties in the Project area: --Patty, Jenkins, and Pardee 1922, 24 and 26. --Hunting, Marshall T., 1964. -- Mineral Resources of the State of Washington, Mineral Index Bulletin 36.	Comment acknowledged.

Comment format	Date	Stakeholder	Affiliation	Stakeholder comment	SCL response to comment
Verbal	6-27-06	S. Kramer	USFS	S. Kramer asked if SCL anticipates submitting inventory findings to FERC after 2007.	Findings will be submitted to FERC in the draft and final HPMP, which will be submitted with the draft and final license applications.
Verbal	6-27-06	D. Egbers	Metaline Police Commissioner	D. Egbers commented that William Hong was a historically prominent landowner in the area, and further information could be attained from the Ah Bok society, and potentially from John Ogmundson, who is a retired employee of Sullivan Creek, Colville National Forest.	Comment acknowledged.
Verbal	8-15-06	K. Lyons	KNRD	K. Lyons suggested that SCL specify the minimum interval setting for shovel probing.	SCL would review the methodology section to see if language relating to minimum intervals for shovel probes could be incorporated.
Verbal	8-15-06	K. Lyons	KNRD	K. Lyons asked that language be added to the methodology indicating that no samples will be taken of human remains from inadvertent discoveries.	While the Study Plan already includes general language prohibiting analysis of human remains, SCL would add a specific reference to bone assays.
Verbal	8-15-06	K. Lyons F. Winchell	KNRD FERC	K. Lyons asked if SCL would be seeking formal or concurrent Determinations of Eligibility (DOEs). He suggested SCL seek concurrent DOEs as those need only agency staff signatures as opposed to formal DOEs which also need signatures of private property owners. F. Winchell added that if SCL was seeking National Register listing, a formal DOE would be	Comment acknowledged.

Comment format	Date	Stakeholder	Affiliation	Stakeholder comment	SCL response to comment
				needed, but otherwise concurrent DOE is sufficient.	
Verbal	8-15-06	F. Winchell	FERC	F. Winchell asked if SCL was examining site specific adverse effects when looking at potential Project effects.	SCL would evaluate site specific adverse effects as part of the Cultural Resources Study. The results of this study will help SCL develop the HPMP.
Verbal	8-15-06	K. Lyons	KNRD	K. Lyons suggested holding two local events to educate the public about Project cultural resources.	SCL concurred that holding local events for interested members of the public was an excellent suggestion.
Archaeological Predictive Model update					
Verbal	5-25-06	K. Lyons	KNRD	K. Lyons commented that on the inside margins of sloughs, LIDAR images will often show perpendicular barbs which indicate cultural resources. Kevin also said that high sand fraction in soils often indicates a high probability of cultural resources.	Comment acknowledged.
Verbal	5-25-06	S. Kramer	USFS	S. Kramer added that SCL should be aware of meadows which usually indicate past homesteading sites.	Comment acknowledged.
Verbal	5-25-06	R. Whitlam	DAHP	R. Whitlam expressed concern with the applicability of the predictive model. He asked if the model would help resolve adverse effects of the Project on cultural resources, and said he was concerned that the predictive model and the inventory would be at cross purposes due to the restrictive timeline.	The value of the predictive model would lie in its interpretive value. The intent behind the model was to provide explanation of discoveries.

Comment format	Date	Stakeholder	Affiliation	Stakeholder comment	SCL response to comment
Verbal	5-25-06	S. Kramer	USFS	S. Kramer said that he intends to use the predictive model to assist in testing its efficacy.	Comment acknowledged.
				In response to the question if the group thought there was a way to reasonably build in historic archaeological site modeling, S. Kramer responded that human behavior trends are chaotic and he did not think it possible to include this in the model.	Comment acknowledged.
Verbal	5-25-06	R. Whitlam	DAHP	R Whitlam commented that Bayesian statistics could be valuable in building in historic archaeological site modeling.	Comment acknowledged.
Verbal	6-27-06	S. Kramer	USFS	S. Kramer reminded SCL that he gave Lisa the form for the ARPA permit, and if SCL plans on gathering information on USFS lands, they will need to submit the ARPA form to Kim Duren (USFS) as soon as possible.	SCL had tentatively identified Sullivan Creek, Sand Creek, and Monument Bar as potential areas for the model field reconnaissance and if they do include Monument Bar in the reconnaissance they will submit the ARPA form.
Verbal	6-27-06	D. Egbers	Metaline Police Commissioner	D. Egbers noted that he has a record of all homesteads in the area from 1872-1913, deeds of reservoir lands and tax lot numbers that he will give to SCL.	Comment acknowledged.
Verbal	8-15-06	S. Kramer	USFS	S. Kramer noted that the USFS ARPA permit for this field season does not require a final product. However, Steve said that if reports will be produced as a result of the FERC process, it would be helpful to insert dates of those reports in the ARPA permit.	The Cultural Resources Study contractor would insert the submittal dates for the initial and final study reports in the ARPA permit application for the Cultural Resources study.

Comment format	Date	Stakeholder	Affiliation	Stakeholder comment	SCL response to comment
Verbal	8-15-06	S. Kramer	USFS	S. Kramer noted that there are USFS law enforcement issues at Monument Bar that he would talk about with Lisa and Glenn the next day on their site tour.	Comment acknowledged.
Verbal	8-15-06	F. Winchell R. Whitlam	FERC DAHP	F. Winchell and R. Whitlam both said that they would like hardcopies of the Predictive Model output maps.	Request acknowledged.
Verbal	8-15-06	K. Lyons	KNRD	K. Lyons requested the GIS shape files of the Predictive Model so that he can independently test its efficacy.	Request acknowledged.

9 SOCIOECONOMIC RESOURCES

In its Pre-Application Document (PAD) for the Boundary Project (SCL 2006), SCL provided an in-depth synthesis of existing socioeconomic information relevant to the Project vicinity and Pend Oreille County (one of 16 counties designated by the State as a “distressed area” in 2004; State of Washington Workforce Explorer 2005). In addition to providing a picture of existing socioeconomic conditions in the region, the information presented in the PAD illustrated that through the provision of at-cost electricity, the payment of impact fees, and the effect of SCL as a local business enterprise (jobs, payment for goods and services, employee purchases, etc.), SCL contributes to the local economy within Pend Oreille County. SCL has identified no known or potential adverse cumulative effects from the proposed relicensing of the Project on socioeconomic resources in the Project vicinity.

Based on the information presented in the PAD, SCL has not identified the need for any information-gathering related to socioeconomic resources as part of the formal study phase of the relicensing. Because potential protection, mitigation, and enhancement (PME) measures that may be proposed for the new license term could affect the local economy (e.g., by affecting electricity rates or increasing tourism), SCL will take this potential effect into consideration during the preparation of its Preliminary Licensing Proposal (PLP) and License Application, as described in section 1.2.5 of this PSP.

In the PAD/Scoping comment letter filed with FERC by the USDA Forest Service (USFS) on August 31, 2006 (USFS 2006), the USFS suggested that SCL look at both market and non-market benefits as well as costs associated with potential PME measures when evaluating the effect of PME measures on the County’s economy. SCL reiterates its intent (as expressed in section 5.9.1 of the PAD) to look at both costs and benefits (including non-market benefits) of potential PME measures as it develops its PLP and License Application. As noted in section 1.2.5 of this PSP, SCL will at that time seek input from the USFS and other interested parties on selection of an appropriate methodology to describe non-monetary benefits of proposed PME measures.

Socioeconomic issues potentially associated with the Project include the Project’s relationship to local tourism, as described in section 5.9 of the PAD. The existing contribution of the Project on tourism — as well as the potential socioeconomic effects of any recreation-related PME measures that may be considered during development of the PLP — will be better understood after the completion of the proposed Recreation Resource Study described in section 6.1 of this PSP.

For the reasons noted above, SCL is not proposing to conduct any socioeconomic resource studies as part of the relicensing studies program outlined in this PSP. However, among the formal PAD/Scoping comments and study requests submitted to FERC, one request for a socioeconomic study was submitted by a stakeholder. This request, which was made by the Selkirk Consolidated School District #70, is discussed below, together with SCL’s rationale for not including the requested study among the study plans proposed in this PSP.

9.1. Requested Socioeconomic Resource Study Not Adopted in the PSP — School District Study Request

In its Request for Study and Comments on SD1, filed with FERC on September 1, 2006, the Selkirk Consolidated School District #70 (School District) requested a study of the socioeconomic impact of the Boundary Project on the school district (hereafter referred to as the School District Study Request). For the reasons provided below, SCL is not including this requested study in its PSP. There is no apparent nexus between the condition of concern to the School District (its inability to gain voter approval for capital improvement bonds) and the Project. Moreover, payments from SCL to the School District relating to the Boundary Project have always been and should continue to be handled under provisions of state laws rather than under the Federal Power Act.

9.1.1. Description of Study Request

The School District stated that the goal of its proposed study is to “determine if there is a connection between the project construction and the inability of the school district to pass a long-term construction bond” (School District 2006, p. 3). In describing project nexus, the School District noted that the Project is located within the School District’s boundaries, and stated that,

“...the requested study will determine if the Boundary Project or ensuing operations had a direct, indirect or cumulative [e]ffect on the Selkirk Consolidated School District’s inability to construct or modernization school facilities. If such a connection exists, the school district is requesting that during the license renewal, Seattle City Light place in a construction fund the amount equal to the school’s indebtedness to be used for school construction or modernization. Impact fees paid to the local county would not be included in this contribution as the school district has no legal authority to negotiate with Seattle City Light for the county funds.” (School District 2006, p. 7.)

9.1.2. Background

State law imposes requirements independent of FERC’s licensing process on municipal owners of hydropower facilities to compensate local governments for project impacts on those local governments. RCW 35.21.425.¹ Specifically, if the “construction or the operation of the generating facilities” increases the School District’s financial burden or causes the District to lose revenue, then SCL enters into an agreement with the County *or* the School District “to recompense such losses or to provide for such increased financial burden.” SCL has entered into

¹ This statute provides: “Whenever after March 17, 1955, any city shall construct hydroelectric generating facilities ... in a county other than the county in which such city is located, and by reason of such construction or acquisition shall (1) cause loss of revenue and/or place a financial burden in providing for the public peace, health, safety, welfare, and added road maintenance in such county, in addition to road construction or relocation as set forth in RCW 90.28.010 and/or (2) shall cause any loss of revenues and/or increase the financial burden of any school district affected by the construction because of an increase in the number of pupils by reason of the construction or the operation of said generating facilities, the city shall enter into an agreement with said county and/or the particular school district or districts affected for the payment of moneys to recompense such losses or to provide for such increased financial burden, upon such terms and conditions as may be mutually agreeable to the city and the county and/or school district or districts.”

a number of such agreements under state law — not through the FERC licensing process — designed to address the burden on the School District. By contract dated November 22, 1999, SCL entered into a impact fee agreement with Pend Oreille County, which expires December 31, 2008, that provides for County payment of \$117,482 to the School District, adjusted annually by an inflation factor. SCL anticipates that in parallel with the FERC licensing process, it will renegotiate the terms and conditions of its impact fee agreement with the County, and that the agreement will continue to provide for payments to the School District. SCL has often contracted directly with the School District to make impact fee payments.² This history of impact fee agreements under state law demonstrates that the School District can indeed contract with SCL for impact fee payments, and that SCL’s impacts have always been addressed under state law.

9.1.3. Nexus Between Project Operations and Effects

The School District is understandably concerned about its ability to issue long-term bonds. However, there is nothing to suggest that its inability to date to issue such bonds is a direct, indirect, or cumulative effect of Project operations. (See 18 CFR § 5.9(b)(5)). The School District Study Request contains some speculation regarding how the presence of the Project reservoir may influence demographic patterns. Moreover, the School District provides no information about what construction or modernization of facilities it wishes to perform, and any potential linkage between those particular improvements and the Project. Likely it is the passage of time since construction, rather than Project operations, that is the reason School District facilities now require modernization. Finally, the School District does not address a critical element of the nexus analysis — “how the study result would inform the development of license requirements” (18 CFR § 5.9(b)(5)). In fact, the study result would be unlikely to inform the requirements of the new Project license because payment of impact fees to the School District is handled outside the FERC licensing process.

9.1.4. Proposed Study Methodology

Even if some study were warranted, the School District’s proposed methodology would be inappropriate. The School District acknowledges that it “is requesting that a socioeconomic impacts study results in a summary of pre-project versus existing economic, demographic and property value conditions within our school district boundary” (School District 2006, p. 7). A comparison of pre-Project to existing conditions would shed no light on Project impacts. A “then and now” comparison would reflect how the present differs from the past, but would not reveal whether the differences are due to the passage of time, regional factors, or other factors outside SCL’s control.

² See Seattle Ord. No. 111760 (1984) (authorizing an agreement between the City and the School District for payment to the District of \$7500 – \$15,000 annually from 1983 through 1986 for impacts associated with construction and installation of two new generators at the Project); Seattle Ord. No. 94512 (1966) (authorizing an agreement between the City and the District for City payment of 17 cents per student (children of SCL employees or construction personnel) per day through the end of the 1968 -1969 school year); and Seattle Or. 92245 (1963) (authorizing an agreement between the City and District for City payments in aid of senior high school construction and purchase of a school bus for the District).

9.1.5. Conclusion

SCL does not plan to include the study requested by the School District because the request does not address an identified impact of Project operations and the study would not provide information that would be pertinent to the development of license requirements. SCL does plan, however, to negotiate a new impact fee agreement that will provide, among other things, for continuing payments from SCL to the School District for any impacts.

9.1.6. Literature Cited

School District (Selkirk Consolidated School District #70). 2006. Request for Study & Comments on SD1, Project No. 2144-035 Washington, Boundary Hydroelectric Project, Seattle City Light. September 1, 2006.

SCL (Seattle City Light). 2006. Pre-Application Document for the Boundary Hydroelectric Project (FERC No. 2144). Seattle, Washington. May 2006. Available online at http://www.seattle.gov/light/news/issues/bndryRelic/br_document.asp

State of Washington Workforce Explorer. 2005. Distressed areas list for Washington State. October 2005. Available at <http://www.workforceexplorer.com/article.asp?articleId=5010&PAGEID=&SUBID=>. Accessed October 20, 2005.

USFS (USDA Forest Service). 2006. Boundary Hydroelectric Project, FERC No. 2144-035, Response to Scoping Document 1, Comments on Pre-Application Document, and Study Requests. Colville National Forest. August 31, 2006.